AUTHOR MIRONOV E.S., NEMENOV L.M.

TITLE Investigation of slow electron emission induced by high energy protons. (Issledovaniye, emissii medlennykh elektronov pod deystviyem protonov bol'shikh energiy, Russian.) PA 2671

PERIOLICAL Zhurnal Eksperim. i teoret. Fiziki 1957, Vol 32, Nr 2, pp 269 - 273 (USSR)

Received: 5/1957 Reviewed: 6/1957

ABSTRACT The slow electrons were knocked out from thin foils in the direction of motion (coefficient γ_1) and in an opposite direction (coefficient γ_2). The authors determined the dependence of the coefficients γ_1 and γ_2 on the energy of the impinging protons within the interval of from 2 to 7,3 MeV. Investigations were carried out on aluminium and nickel. The protons were furnished by 1 1/2 m cyclotron with focussing bundle. On this occasion hydrogen molecules were accelerated to ~14,7 MeV and these molecules were then torn apart on the occasion of a collision with a thin aluminium foil.

Measuring method: The 6 basic circuits enabling the measuring of all orders of magnitude are shown in a drawing. For reasons of safety all operations were carried out by remote control. Also the apparatus for electric measuring is discussed on the basis of a drawing.

CARD 1/2 Measuring Results: Already at a field strength of ~200 Ørsted

PA - 2671

Investigation of slow electron emission induced by high energy protons.

the electron component of the current was lacking nearly completely. In the case of final tests magnetic field strength was increased to $\sim$ 800 Ørsted. The values applied to the various potentials are given. A diagram demonstrates the dependence of the coefficients γ_1 and γ_2 on the energy of the inciding protons for aluminium and nickel. In the case of the proton energies of from 2 to 7,3 MeV used here the coefficients of electron emission for Al and Ni differ only little and change in diameter from 1,8 to 0,5. In the direction of the inciding proton bundle more electrons are knocked out than in the oppesite direction. This difference amounts to 20% for Al and Ni.
Inaccuracy on the occasion of the determination of γ amounted to a maximum of $\pm$ 10 %. All experiments were carried out in 1953. (5 illustrations)

ASSOCIATION: Institute of Atomic Energy of the Academy of Science of the USSR.
PRESENTED BY: -
SUBMITTED: 24.9. 1956.
AVAILABLE: Library of Congress.

CARD 2/2

21(2)

AUTHORS: Arzumanov, A. ..., Mirzoev, ... S.

TITLE: Application of a Non-Uniform Electric Field for the Output of Accelerated Particles From the Cyclotron (Primeneniye neodnorodnogo elektricheskogo polya dlya vyvoda uskorennykh chastits iz tsiklotrona)

PERIODICAL: Atomnaya energiya, 1957, Vol ..., Nr 2, pp 2[illegible]

ABSTRACT: For many nuclear-physical investigations it is necessary that the particle ray escaped from the cyclotron possesses maximum intensity and a small radial ... at the point where it hits the target. On the basis of data obtained by M. D. Fedorov a deflection system with a non-uniform electric field was developed. The mathematical equations describing the mode of action of the system developed are mentioned briefly. The deflection system determined for the 20 Mev.-deuteron ray consists of 2 main parts. The voltage at the electrode of the first part introduced into the quant amounts to 60 kv, while there is a voltage of 80 kv at the electrodes of the second part (outside the quant). The total angle convergence is 120°, the inlet aperture 8 mm, the out-

Card 1/2

Application of a Non-Uniform Electric Field for the Output Section of Accelerated Particles From the Cyclotron

let aperture 50 m. The system consists of a part electric field and their shape as well as the course of the electric field strength are given in graph. Unlike the plain condenser earlier used, the new deflector system reduces the convergence of the escaping ray by 5 times approximately. There occurs no additional current loss in the channel and no lack as in the vertical convergence. The system was calculated and constructed in 1954 for the first time. A similar system without correcting electrodes was calculated by [illegible] Water, co-worker of the NIIEFA. It is applicable to the [illegible] cyclotron. The parameters of the electrodes may be determined also in such a way that the ray escaping from the cyclotron is directed either parallel or convergent. The subject of the present paper was placed by L. M. Nemenov. There are [illegible] refs.

SUBMITTED: October 17, 1956

Card 2/2

MIRONOV, Ye. S.

21 (?)

SOV/89-7-2-8/24

AUTHORS: Alekseyev, A. G., Gashev, M. A., Dondyan, [illegible], I. F., Matora, I. M., Mironov, Ye. S., Monoszon, [illegible], Malyshev, [illegible]bov, L. M., Pirogovskiy, V. V., Romanov, N. A., Strel'tsov, N. S., Fedorov, N. D.

TITLE: A 1.20-Meter Cyclotron With a Magnetic Pole Diameter (Tsiklotron s diametrom polyusov magnita 120 cm)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 2, pp 143 - 150 (USSR)

ABSTRACT: The device was developed in the Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury (Scientific Research Institute for Electro-physical Apparatus) in collaboration with the Institut atomnoy energii AN SSSR (Institute for Atomic Energy of the AS USSR). The electro-magnet was designed by N. N. Indyukov, Ye. A. Bezgachev, A. V. Klimov under the guidance of B. V. Rozhdestvenskiy and N. Ye. Gritsakov (Figs 1 and 2 are cross sections of the electro-magnet). The radial field force was measured in such a way that the error in the center of the field was less than 0.01% of the force of the field. The error at the measurement of the azimuthal inhomogeneity of the field was less than 0.007% of the field force

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in the center of the field. The position of the magnetic plane was determined by the magnetic scale developed by V. V. Pirogovskiy. For the correction of the magnetic field inside rings and discs were used, which are installed between the poles of the magnet and the lids of the vacuum chambers (sectional views are given). The measurements, the construction method and the assembly of the resonance conductor and of the duants are described in detail (there are sectional views). The acceleration chamber and the resonance conductor (there is a detailed sketch) were constructed by A. I. Alyab'yev, I. F. Zhukov, N. N. Rumyantsev under the supervision of B. I. Produvnov. The whole high-frequency installation is shown in a block diagram and there is a short description of part of it. The high-frequency section was developed by [illegible] M. Drabkin, N. V. Yanatovskiy and N. Ye. Protasovskiy under the supervision of A. S. Temkin. The vacuum systems were computed by Ya. L. Mikhelis and N. M. Karpenko. The movement of ions in the ion source and in the central part of the cyclotron is of special importance at the acceleration. This movement was thoroughly studied by I. M. Matora. He developed a special deflector system. The focusing system was computed by Ye. G.

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A 1.20-Meter Cyclotron With a Magnetic Pole Diameter SOV/89-7-2-8/24

Bessargin. The magnetic quadrupole lenses of N. A. Ostrovskiy and N. I. Konovalova were used in this system. The cyclotron produces 13.7 mev of deuterons while the extreme route of the particle flux can be up to 1 ma. There is a guided beam of 100-200 µa at disposal for normal work and the beam is focussed to a plane of 15-20 mm². The control desk, signal equipment and the special electrical installations were designed by V. S. Lyublin, B. D. Bevrov, P. S. Gurnikel' working under the guidance of G. S. Gordeychik. Similar cyclotrons constructed in the USSR, are in operation in Romania, China, Poland and GDR. In the near future a cyclotron of a similar type will be completed in the USA. The first cyclotron of this type was tested in 1956 by [illegible] Saulin, [illegible] Ye. G. Bessargin, A. V. Stepanov, [illegible] A. Malivayko, [illegible] Veselov, V. A. Sukhov and A. [illegible] Antonov from the Scientific Research Institute for Electrophysical Apparatus and [illegible] Afanas'yev, A. A. Arzumanov and [illegible] A. Menshchenov from the Institute for Atomic Energy of the AS USSR. The magnetic quadrupole lenses were tested at the cyclotron of the AS UkrSSR with the participation [illegible]. The [illegible] operation of the cyclotron was supervised by A. V. Kolesnikov,

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A 1.20-Meter Cyclotron With a Magnetic Pole Diameter SOV/89-7-2-8/24

L. S. Fedulov, V. V. Romanov and A. A. Aaryyev. Ye. [illegible] gave valuable advice. [illegible] Arshenko [illegible] the testing of the first cyclotron. Problems [illegible] the planning of the cyclotron were discussed with [illegible] Alikhanov. There are 10 figures and 5 Soviet references.

SUBMITTED: March 12, 1959

21.2100

AUTHORS: Meshcherov, R. A., Mironov, Yu. S., Nemenov, L. M., Rybin, S. N., Khalimovskiy, Yu. A.

TITLE: Ion Acceleration in a Cyclotron With Azimuthal Variation of the Magnetic Field

PERIODICAL: Atomnaya energiya, 1960, Vol. 8, No. 3, pp. [illegible] (USSR)

ABSTRACT: Thomas showed already in 1938 (see ref. at end of abstract) that charged particle motion in cyclotrons can be made stable in case of radially increasing fields if one introduces azimuthal variations in field intensities. Technical difficulties and the discovery of the self-phasing principle delayed, however, the use of azimuthally varying magnetic fields. The authors tested this kind of field in 1957 on a model of the 1.5-m cyclotron (1/2 natural size). They showed that a combination of [illegible] and current corrective elements can produce a wide

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Ion Acceleration in a Cyclotron With Azimuthal Variation of the Magnetic Field

range of desired field shapes. In [illegible] constructed new full-scale parts for the [illegible] cyclotron whose shortest [illegible] wavelength determined the upper limits of the attainable particle energies. The azimuthal variation of the magnetic field with a [illegible] was achieved by means of three sectors. The sectors of the accelerator chamber with the corrective elements are shown on Fig. 1. To minimize the r-f losses, all iron surfaces were electrolytically coated to 1 ~ 7 μ layer of copper. As many elements were placed in the depressions between the segments and served to increase field intensity towards the periphery. Elements for fine correction were located at radii between 140 and 240 mm. Figures 2 and 3 show the central and off-center corrective windings. Characteristics of the beam were measured by means of two screened probes. An aluminum filter served to eliminate charged particles of low energy. The ions originated

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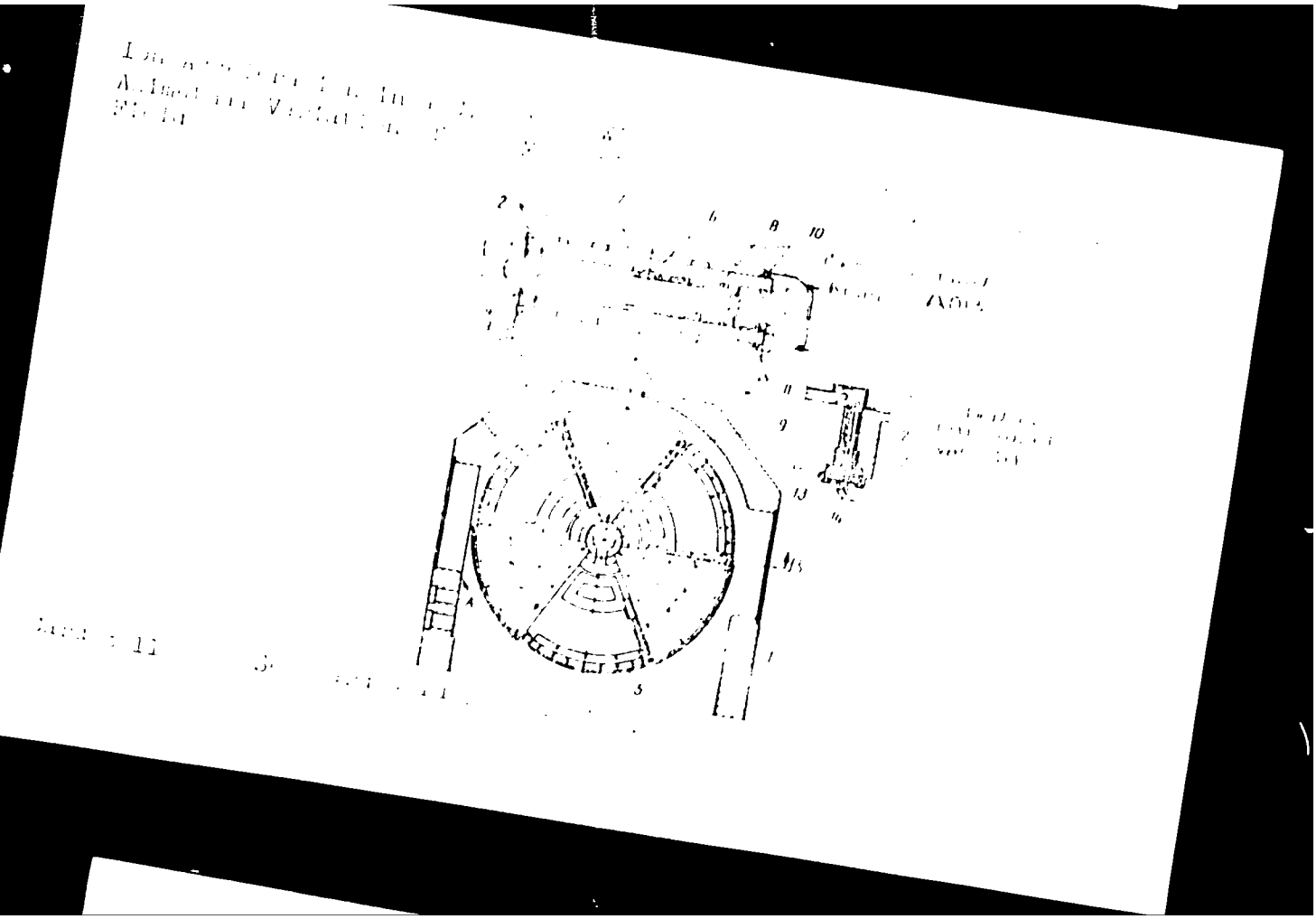

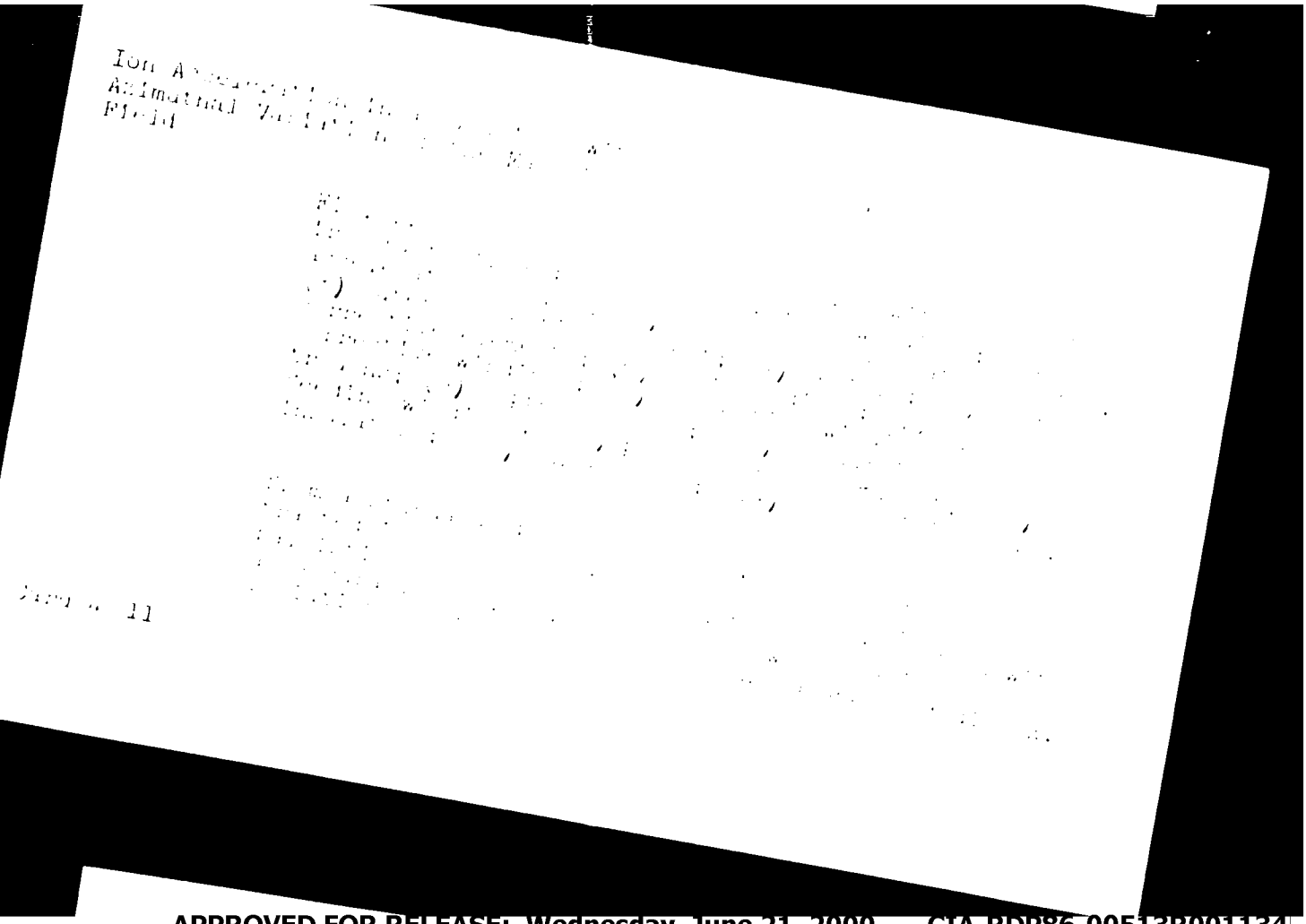

Ion Acceleration In a Cyclotron With
Azimuthal Variation of the Magnetic
Field

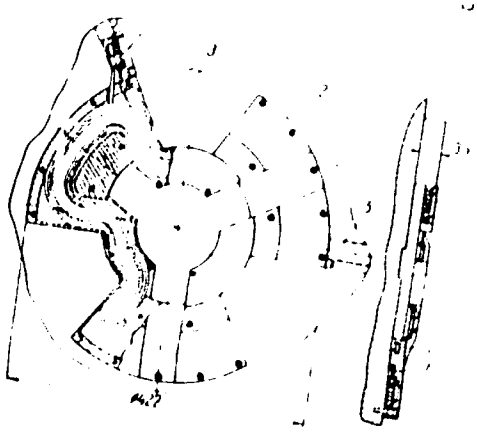

Fig. 2. Central corrective winding; (1) cover of accelerator chamber; (2) frame; (3) copper tube winding; (4) central disk; (5) copper screen; (6) detachable vacuum joint; (7) tubes for water-cooling of frame; (8) tightening plate.

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Ion Acceleration in a Cyclotron With Azimuthal Variation of the Magnetic Field

Fig. 3. Corrective windings in the trenches: (1) cover of accelerator chamber; (2) frame; (3) winding; (4) detachable vacuum joint; (5) tubes for water; (6) of frame; (7) copper screen; frame cover.

Card 6/11

Ion Acceleration in a [illegible] With
Azimuthal Variation of [illegible]
Field

[illegible]

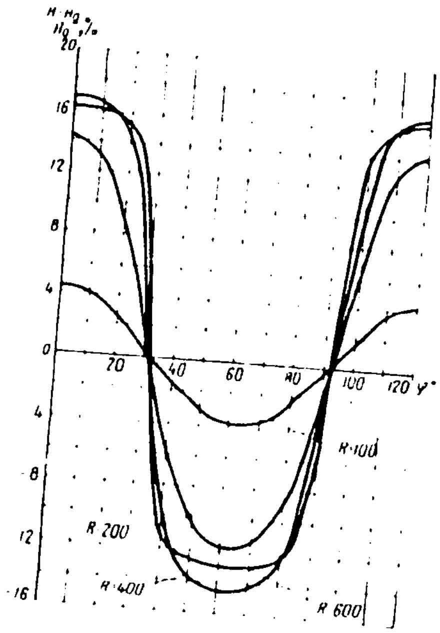

Fig. [illegible] Magnetic
Field Intensity Versus
[illegible] ϕ.

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Ion Acceleration in a Cyclotron With Azimuthal Variation of the Magnetic Field

[illegible]

Figure 8 shows the relationship between the beam current and the radius R. The relatively small decrease of current with radius in the cyclotron with azimuthal variations can be explained by smaller phase losses and strong vertical focusing. The authors note that the central corrective windings showed no favorable effects and produced (with both polarities of the added field) only a decrease of the probe currents. Using an absorber of 1.0 mm the authors measured an energy of 21.5 mev at a radius of approximately [illegible] mm, and this agreed with the calculated value within a 3% error. Energy spread of the ions was approximately ±1.5%, while in the conventional cyclotron this spread was approx. ±3%. The authors found also that at the 79½ mm radius the beam acquired a much larger width (more than 1 mm) which enabled use of much smaller [illegible] electrostatic potentials than those

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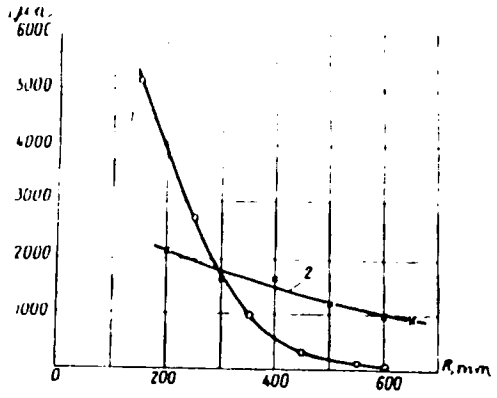

Fig. 8. Current versus radius of probe setting: (1) when device worked as conventional cyclotron; (2) for cyclotron with azimuthal variation of the magnetic field.

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Ion Acceleration in a Cyclotron With Azimuthal Variation of the Magnetic Field

78[illegible]
SOV/[illegible]

needed in conventional cyclotrons, and to obtain outside ion beams of energies up to 22-24 mev. The authors stated that they were able to obtain (using 80-kv potentials across the dees) molecular hydrogen and deuterium beams of energies up to 21 mev and approx. 1,[illegible] μa. At the maximum energy of [illegible] mev the beam current was of the order of 20 μa. The shape of the magnetic field of the 1.[illegible] m cyclotron coincided completely with that of the scaled-down model. N. D. Fedorov, A. P. Babichev, A. S. Kuzmin, and V. K. Anokhin took part in the magnetic field measurements; S. I. Prokof'yev helped with the covers; N. N. Khaldin gave advice and took part in construction designs; N. I. Vendikov serviced the cyclotron; I. M. Shnaptsev and A. I. Yudkin tested the vacuum; and M. A. Yegorov, V. M. Komarov, V. I. Andreyev, and V. S. Kalyayev performed the mounting of the devices. There are 14 figures; and [illegible] references, [illegible] Soviet, [illegible] U.S. The U.S. references are: E. Kelly, R. Pyle, L. Thornton, Rev.

Card 10/11

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113[illegible]

Ion Acceleration in a Cyclotron With Azimuthal Variation of the Magnetic Field

Table
SOV [illegible]

Scient. Instrum., 27, [illegible] (1956); F. Heyn, Kuse Kong Tat, Rev. Scient. Instrum., 29, [illegible]; H. Blosser, R. Worsham, C. Goodman, R. Livingston, J. Mann, H. Moseley, G. Trammel, T. Welton, Rev. Scient. Instrum., 29, 819 (1958); L. Thomas, Phys. Rev., [illegible].

SUBMITTED: August 6, 1959

Card 11/11

S/089/61/010/[illegible]
B102/B209

26.2320

AUTHORS: Meshcheryakov, R. A., Mironov, Ye. S.

TITLE: The problem of generating an azimuthally variable magnetic field

PERIODICAL: Atomnaya energiya, v. 10, no. 2, 1961, [illegible]

TEXT: This paper presents a method of calculating the shape of the pole-piece surfaces, which makes it possible to generate an azimuthally variable magnetic field of a given depth and with given radial distribution of the field strength. The authors proceed from the assumption that the pole-piece surfaces be equipotential surfaces. In such a case, the magnetic potential may, in cylindrical coordinates, be represented in the form of

$$P(r,\varphi,z) = \sum_{k=1}^{\infty} V_{2k-1}(r,\varphi) z^{2k-1};$$ the coefficients can be determined through the recurrence formula $$V_{2k+1} = -\frac{1}{2k(2k+1)}\left(\frac{\partial^2 V_{2k-1}}{\partial r^2} + \frac{1}{r}\frac{\partial V_{2k-1}}{\partial r} + \frac{1}{r^2}\frac{\partial^2 V_{2k-1}}{\partial \varphi^2}\right).$$

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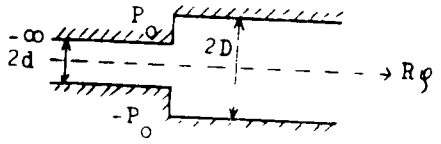
The problem of generating ...

It is evident that $v_{(r,\varphi,z)_{z=0}} = -H_z(r,\varphi)$; the shape of the ... surfaces for arbitrary $H_z(r,\varphi)$ distributions, which may be given analytically as well as graphically, can be calculated by these formulas. This problem has been solved e. g. by Thomas for $H_z = H_o(1+Ar^2+B\cos n\varphi)$ but the complex shape of the obtained pole-piece profile involves considerable technical difficulties of production. However, a variation of the magnetic field may be brought about much easier by employing plane sectorial plates. The field of such pole-pieces cannot exactly be computed. Therefore the field strength between the middle of a sector and the middle of a gap is, for simplicity, assumed to depend on φ in the same way as it does in the case of plane parallel poles of the following shape:



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...e problem of generating ...

...is assumption is justified if Ra ≫ d and R(2π/n - α) ≫ d, where R denotes the radius, α the angle, and n the number of the sectors. Fig. 2 illustrates the regions on the complex planes w and z which by means of (4)

$$w = \frac{d}{\pi} \ln \frac{\sqrt{e^{\pi \frac{z}{d}} + \varkappa^2} - \varkappa \sqrt{e^{\pi \frac{z}{d}} + 1}}{\sqrt{e^{\pi \frac{z}{d}} + \varkappa^2} + \varkappa \sqrt{e^{\pi \frac{z}{d}} + 1}} - \frac{D}{\pi} \ln \frac{\sqrt{e^{\pi \frac{z}{d}} + 1} - \sqrt{e^{\pi \frac{z}{d}} + \varkappa^2}}{\sqrt{e^{\pi \frac{z}{d}} + 1} + \sqrt{e^{\pi \frac{z}{d}} + \varkappa^2}}, \quad (4)$$

...ay be transformed into one another; ($\varkappa = d/D$). The field between the stepped pole-pieces is given by $H(w) = H_u + iH_v = -iH_{max} \varkappa \frac{\sqrt{\exp(\pi z/d) + 1}}{\exp(\pi z/d) + \varkappa^2}$ (5). (4) and (5) were employed in calculating the distribution $H_v = f(u)$ in the middle of the plane between infinitely large stepped pole-pieces; Fig. 3 shows the result. In many cases, $H_v = f(u)$ may favourably be represented in the

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form of the equivalent step field (Fig. 2); in particular, this is the case with the study of ions moving in an idealized field. (6)

$$\Delta = \frac{1}{H_{\text{макс}}(1-\varkappa)}\left\{\int_{-\infty}^{\infty} H_z(u)\,du - \right.$$

$$\left. - \int_{-\infty}^{0} H_{\text{макс}}\,du - \int_{0}^{\infty} \varkappa H_{\text{макс}}\,du \right\} =$$

$$= \frac{d}{\pi(1-\varkappa)}\left[\frac{1+\varkappa^2}{\varkappa}\ln\frac{1+\varkappa}{1-\varkappa} - \ln\frac{16\varkappa^2}{(1-\varkappa^2)^2}\right]. \quad (6)$$

is the characteristic parameter of such a field. For comparison with theory, measurements were made at an electromagnet with 370 mm pole-piece diameter and 90 mm gap width. Two steel disks (16 mm thick, 370 mm in dfameter) with sectors (α=52.5°, 5 mm thick) attached to them were inserted between the cylindric poles. The gap between the sectors was 40 mm wide. Thus, d was 20 mm, D = 25 mm, $\varkappa$ = 0.8; the central field strength amounted to H_c = 6000oe. Agreement between experimental and theoretical results was

the better the longer the distances from the center were. In the case of 50 < R < 150 mm one may assume that $\kappa = d/D \approx H_{z\,gap}/H_{z\,sect}$. The shape of the sector plates within the range of 50 < R < 145 mm and for any $\bar{H}_z(R)$ may be calculated after formula (6). The results of such a calculation for $\bar{H}_z(R)$ and $\bar{H}_z(R)$ being a monotonically rising function are discussed in brief. Finally, a model-magnetic field of a 1.5-m cyclotron represented by an electromagnet (as described) is discussed. The 6-cm thick sectorial plates ($\varphi = 60^\circ$, d = 16 mm, D = 22 cm) became thinner towards the edge (4.4 mm); a little disk (3.5 mm thick, 42 mm in diameter) was placed in the center of the plate. The measurements were conducted at 14.500 oe. There are 3 figures and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc.

SUBMITTED: June 22, 1960

Legend to Fig. 3: Comparison of theoretical and experimental data; the measured values were taken at various R (in mm): o - 50, x - 70, [illegible] - 90, [illegible] - 110, o - 130, and [illegible] - 145 mm.

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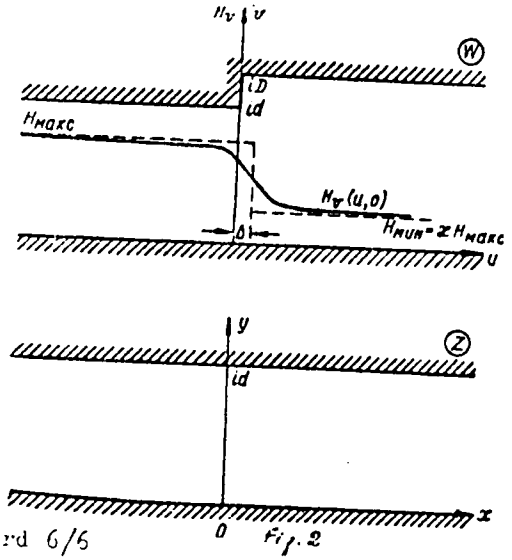

Card 6/6 Fig. 2

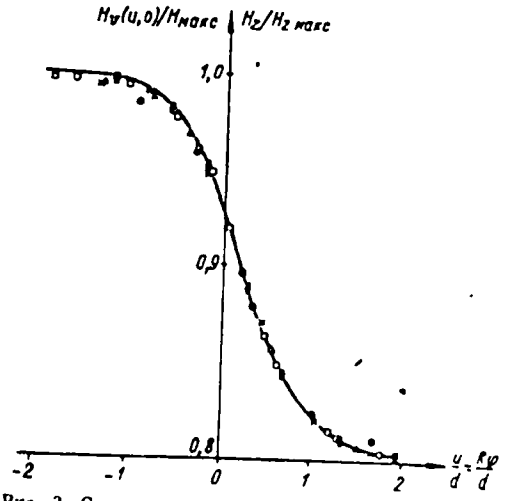

Рис. 3. Сравнение расчетных и опытных данных. Сплошная кривая соответствует расчетным данным, точками обозначены результаты измерений на разных радиу-

ARZUMANOV, A.A.; VENIKOV, N.I.; MIRONOV, Ye.S.; NEMENOV, L.M.

Magnetic iron channel for extracting and injecting charged particles. Atom.energ. 10 no.5 461-468 My '61. (MIRA 14:5)
(Magnetic fields)

ARZUMANOV, A.A.; MESHCHEROV, R.A.; MIRONOV, Ye.S.; NEMENOV, L.M.; RYBIN, S.N.
KHOLMOVSKIY, Yu.A.

Beam exit and energy regulation in a cyclotron with azimuthal magnetic field variation. Atom.energ. 10 no.5:501-502 My '61. (MIRA 14:5)

(Cyclotron)

ZAVENYAGIN, Yu.A.; MESHCHEROV, R.A.; MIRONOV, Ye.S.

Some aspects of the theory of a cyclotron with an azimuthally varying magnetic field. Atom. energ. 11 no.1:26-33 Jl '61. (MIRA 14:7)

(Cyclotron) (Magnetic fields)

S/089/62/012/00 --
B102/B138

24673C

AUTHORS: Arzumanov, A A., Meshcherov, N. A., Mironov, Y. [illegible]
Nemenov, L M., Rybin, S N., Kholmovskiy, Ya A

TITLE: Experiments on acceleration in, and emission of [illegible] in a cyclotron with azimuthally varying magnetic field and energy regulation

PERIODICAL: Atomnaya energiya, v 12, no 1, 1962, 12 - 21

TEXT: Problems of formation and correction of magnetic fields and ion acceleration are considered. The studies and experiments described were carried out at the 1.5-m cyclotron of the Ordena Lenina Institute Atomnoy energii im I V Kurchatova AN SSSR (Lenin Order Institute Atomic Energy imeni I V Kurchatov AS USSR). Azimuthal variation of magnetic field is achieved by three iron sectors. Various types were used to determine the trajectories, current and intensity of tions of accelerated ions. Their arrangement in the accelerator is shown in Fig. 3. Magnetic field distribution in the central region described by $H_z(R,\varphi) = H_0\left[1 + f(R) + \sum_k F_k(R)\cos k\varphi\right]$, H_0 - ma[illegible]

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Experiments on acceleration 3102/B138

strength in the center, $F(R) = (H_z - H_0)/H_0$ characterizes the [illegible] distribution averaged over [illegible], and F_r [illegible] is the radial distribution [illegible] amplitude of the [illegible] harmonic [illegible] Fourier expansion [illegible]

[illegible]

[illegible] shown [illegible]

[illegible]

Card [illegible]

Experiments on acceleration...

N. Z. Kubyshkin and S. I. Prokof'yev for assistance. There are 1[illegible] figures, 4 tables, and 15 references: 6 Soviet and 9 non-Soviet. The four most recent references to English-language publications read as follows:
F. Heyn, Khoe Kong Tat. Rev. Scient. Instrum., 29, 662 (1958);
J. Zavenyagin, R. Metshcherov, E. Mironov, L. Nemenov, J. Kholmovsky. Proceedings of the Intern. Conf. on High Energy Accelerators and Instrumentation - CERN, 1959, p. 225; R. Livingston, F. Howard. Nucl. Instr. and Meth., 6, 1 (1959); 6, 105 (1960); 6, 221 (1960); 6, 134 (1960)
J. Allen, S. Chatterjee, L. Ernest, A. Jarvin. Rev. Scient. Instrum., [illegible] 813 (1960).

SUBMITTED: May 27, 1961

Fig. 3. Position of probes in the accelerator chamber.

Legend: (1) accelerator chamber, (2) dees, (3) ion source, (4) multi-segment probe, (5) shielded probes, (6) probes for measuring the current in the emitted beam, (7) probes arranged in the dee.

Table 4. Parameters of the emitted beam.

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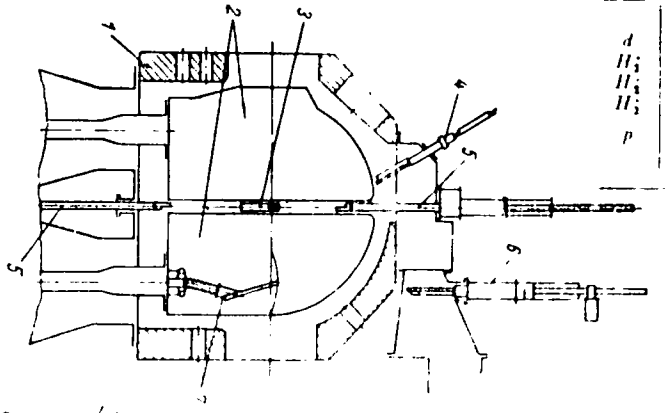
Experiments on acceleration...

Legend: (1) - Ion; H_c, koe; E, Mev; I, μa; k_{beam} = output coefficient, % determined by current measurement with probe 7 (Fig. 3); $2U_A$ = potential difference between the dees, kv; U_{TRS} = deflecting voltage, kv.

Fig. 3



Ион (1)	H_c, кэ	I, мка	$\Delta E/E$, %	$2U_A$, кв	$k_{пучка}$, %	U_{TRS}, кв	
d	17.1	31.5	±0.9	70	38	13	61
H_2^+				50	45	13	60
H_2^+	13.6	20.4	±1.0	115	37	13	34.5
H_2^+	10.3	–		50	40	13	22
p	5.15	–		150	21.5	13	13
				50	70	13	

Table 1

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S/089/62/013/002/001/011
B102/B104

AUTHORS: Babichev, A. P., Venikov, N. I., Knyazyatov, A. S., Meshcherov, R. A., Mironov, Ye. S., Nemenov, L. M., Fedorov, N. D., Kholmovskiy, Yu. A.

TITLE: Control of the magnetic field configuration in a cyclotron

PERIODICAL: Atomnaya energiya, v. 13, no. 2, 1962, 125-134

TEXT: Between 1956 and 1959, experiments were made with a model magnet of one-fifth the full size, made of Ст.-3 (St.-3) steel, in connection with the redesign of the 1.5-m cyclotron belonging to the Ordena Lenina Institut atomnoy energii im. I. V. Kurchatova AN SSSR (Lenin Order Institute of Atomic Energy imeni I. V. Kurchatov, AS USSR). The pole pieces were either cylindrical (370 mm diameter) or conical (300 mm diameter) and the magnet gap was 90 mm wide. The current in the windings could be kept constant to within ±0.1%, and the field strengths were measured with an error of ±0.03-0.1%. The following were investigated: (1) the optimum geometry of the magnet to ensure a field of constant configuration ($\Delta H/H_0(R)$ minimum when H_0 changes), the magnet having

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Control of the magnetic field ...

...rical poles and three pairs of caps 14.5 mm thick of different ...meters. The best results were obtained using caps with a diameter ...ller than that of the poles. Measurements were made not only for $\Delta H/H_0 = f(R)$ with and without shims, but also for $\Delta H/H_0 = f(r)$, where r ... the radius of curvature of the caps. The constancy of the field ...configuration can be improved by replacing the caps by internal shims. ... correction of the magnetic field by inserting circular coils in the ...net gap between the caps. Experiments were made with six such coils, ... different diameters, mounted on a brass frame. Each winding consists ... five turns of a 4 by 0.5 mm copper tube enclosing a flow of water. ...e field created by the coils $H_w(R)$ with current (150 a) and without ...current was measured by a differential method and their effect on the field ... distribution was studied under various conditions. Shimming seems to be ... most convenient way of correcting the field. (3) Sector-type windings. ...ings were used for generating a first harmonic and also for regulating ...the field. In the case of magnets with dead turns, the field of the first ...harmonic was measured in dependence on the radius. (4) Correction of the ...field by annular windings in the shimming gap. These are less effective ... the shimming gap than in the magnet gap. (5) Correction of the field

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B102/B104

Control of the magnetic field ...

for azimuthal variation. For this purpose, only one turn (Cu tube 3 by ... mm; maximum current strength 600 a), was used which had the same effect as in an axisymmetric field. There are 15 figures.

SUBMITTED: August 23, 1961

Card 3/3

MIROV, Ye. S.

Dissertat on defended for the degree of Doctor of Technical Sciences at the Joint Scientific Council on Physicomathematical and Technical Sciences; Siberian Branch

"Cyclotron With Azimuthal Variation of the Magnetic Field of the Radial-Sector Type and Power-Controlled."

Vestnik Akad. Nauk, No. 4, 1963, pp 119-145

24c

L [illegible]-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pab-10 IJP(c) GS

ACCESSION NR: AT5007321 S/0000/64/000/000/0274/0287

AUTHOR: Bayyer, V. N.; Bilnov, G. A.; Bondarenko, L. N.; Yerozolimskiy, B. G.; Kuzneznikov, L. S., Mironov, Ye. S.; Naumov, A. A.; Onuchin, A. P.; Pananyuk, V. [illegible]; Sidorov, V. A.; Sil'vestrov, G. I.; Skrinskiy, A. N.; Khabakhpashev, A. G.; Auslender, V. L.; Kiselev, A. V.; Kushnirenko, Ye. A.; Livshits, A. A.; Rodionov, S. N.; Synakh, V. S.; Yudin, L. I.; Abramyan, Ye. A.; Vaynerman, [illegible]; Vecheslavov, V. V.; Dimov, G. I.; Papadichev, V. A.; Protopopov, I. Ya.; Budker, G. I.

TITLE: Colliding electron-electron, positron-electron, and proton-proton beams

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 274-287

TOPIC TAGS: high energy interaction, high energy plasma, particle physics, particle beam, charged particle beam

ABSTRACT: In the Institute of Nuclear Physics, Siberian Department, Academy of Sciences SSSR, programs on high-energy particle physics are mainly concerned with work on colliding charged particle beams. The Institute considers it unsuitable

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ACCESSION NR: AT5007921

for its purpose to construct huge accelerators whose construction requires large
[illegible] capital and long time. For work on colliding electron-electron, posi-
tron-electron, and proton-proton beams, three installations are being built, which [illegible] work on colliding electron beams was [illegible] Energy [illegible]
[illegible] of the Institute of [illegible] accelerators with
[illegible], after [illegible] Soviet scientists had al-
[illegible] in the [illegible] of the [illegible] type. By that time [illegible]
colliding [illegible] beams of the [illegible] type. By that time [illegible] currents, in particular,
ready acquired some experience in obtaining large electron currents, in particular,
the mentioned laboratory had installed and then abandoned a device for the spiral
storage of electrons (G. I. Budker and A. A. Naumov, CERN Symposium, 1, 76 (1956)),
by which, subsequently, circulating currents of the order of 100 amperes were ob-
tained. In 1957 two variants of this device were considered at the same time. The
first one consisted of two accelerators with spiral storage and subsequent transi-
tion of the particles to synchrotron state in comparatively narrow paths. The
second one had storage rings with constant magnetic field and frequent external in-
jection because of the damping of the oscillations under the action of radiation.
The first variant was more cumbersome; the second variant contained an element not
developed at that time, namely a 100-kilovolt commutator of 10 kilo-amperes with
nanosecond front. At the end of 1957, the first positive results were obtained

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ACCESSION NR: AT5007921

0

with a packing discharger of 100 kilovolts, and work stopped on the variant with storage rings. Originally it was proposed to set up two devices: VEP-1 of 2 × 130 Mev energy, and VEP-2 of 2 × 500 Mev energy. The VEP-1 was considered as an actual model of an accelerator and as a device for conducting initial experiments at low energies. After the Panofsky report in 1958 on his work with colliding electron beams conducted in his laboratory at Stanford, construction ceased on 500-Mev storage paths and work was continued on the 2 × 130-Mev installation. Instead of work on colliding electron beams with energies of 500 Mev, work at the end of 1958 was conducted with colliding positron-electron beams and the planning of the VEPP-2 device was begun, whose main elements are a strong-current electron accelerator and a high-vacuum storage path of 700 Mev energy. At the present time the VEP-1 and VEPP-2 are installed in Novosibirsk. The VEP-1 is in a state of neglect, but at the end of 1964 experiments will be begun with it. Installation of the VEPP 2 has been completed. To obtain a marked effect from the application of colliding proton beams, an accelerator is needed with an energy of at least 10 Gev. Since the ordinary accelerator at such energies is a very bulky machine, it was decided to combine the idea of colliding proton beams with the creation of an iron-less impulse accelerator with very large fields and a neutralized central busbar. This latter work of creating such a machine was reported by the authors at a Moscow conference

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L 47334-65
ACCESSION NR: AT5007921

held in 1956. The presence of a field with two directions in an iron-less accelerator with central busbar permits the acceleration of protons toward opposite sides in one machine, which makes possible the collision of protons in case of a suitable race-track. At the present time the Institute is developing a proton device with a magnetic field of about 200 kilogauss and radius of 2 meters for a particle energy of 12 Gev in the beam (equivalent energy is around 300Gev). Tests are being conducted on models, and an effective method of injection by overcharging of negative ions is under study. Also under development are an impulse electric power supply system of 100 million joules capacity and an hf power supply. Since 1958 the Institute has been conducting theoretical investigations on the limits of applicability of quantum electrodynamics [V. N. Bayyer, ZhETF, 37, 1490 (1959), and UFN, 78, 619 (1962)] for the calculation of the radiational corrections to the electrodynamic cross-sections [V. N. Bayyer and S. A. Kheyfets, ZhETF 40, 613-715 (1961) and Nuclear Physics (in print)], and on other problems of high-energy particle physics that are connected with the preparation of experiments on colliding beams [V. N. Bayyer, I. B. Khriplovich, V. V. Sokolov, and V. S. Synakh, in ZhTF, 1961]. The present report takes up under the mentioned three main headings the following pertinent topics: the accelerator-injection, storage paths, electron-optical channel,

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L 47[illegible]-65
ACCESSION NR: AT5007921

input and output system, experiments on storage, proposed work, experimental set-up, physical layout of magnets, power supply, etc. Orig. art. has: 8 figures.

ASSOCIATION: Institut yadernoy fiziki SO AN SSSR (Institute of Nuclear Physics, SO [illegible])

SUBMITTED: 26May64 ENCL: 00 SUB CODE: EE, NP

NO REF SOV: 012 OTHER: 003

Card 5/5

ACCESSION NR: AP4020585 S/0057/64/034/003/0530/0535

AUTHOR: Venikov, N.I.; Mironov, Ye.S.

TITLE: An approximate method for calculating the focusing properties of a system of two quadrupole magnets

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.3, 1964, 530-535

TOPIC TAGS: electron optics, quadrupole lenses, two quadrupole lens, quadrupole lens aberrations, magnetic quadrupole

ABSTRACT: A number of formulas analogous to (but more involved than) those of thin lens optics are presented for calculating the electron optical properties of a pair of (not necessarily identical) short quadrupole magnets. The use of these formulas for designing ion focusing systems is discussed, and a number of graphs are presented for facilitating the calculations. Formulas are also presented for calculating the effects of small changes in the magnet current, of misalignment of the magnets, of small changes in the magnet separation, and of chromatic aberration. The formulas presented give the magnetic field gradients required within the lenses with an error not exceeding 10% provided the lengths of the magnets do not exceed one-third

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ACCESSION NR: AP4020585

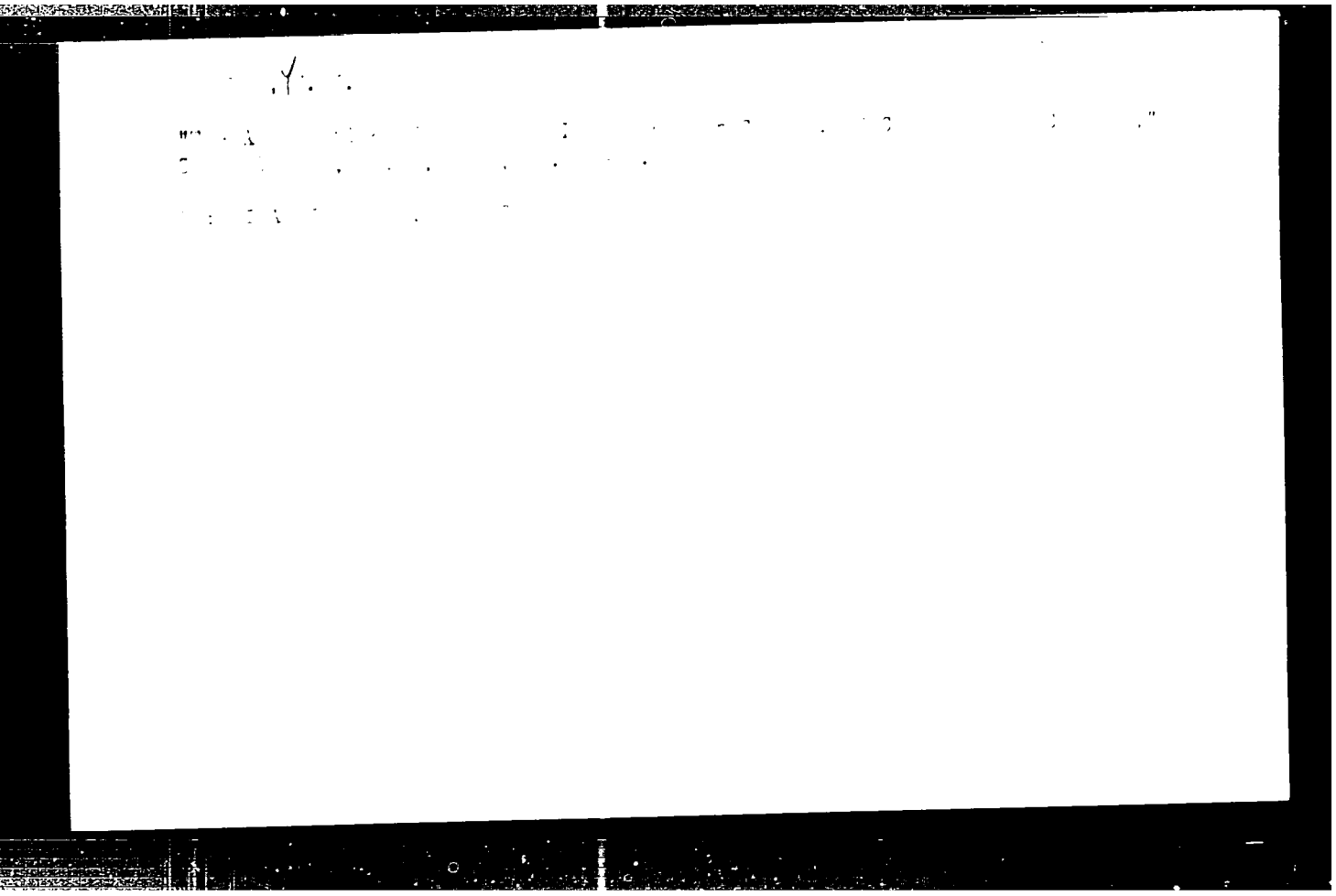
their focal lengths nor two-thirds their separation. [Abstracter's note: The formulas are said to have been derived, but no derivations are given and no references are given to other publications in which their derivation might be found.] Orig. art. has: 16 formulas and 5 figures.

ASSOCIATION: none

SUBMITTED: 07Feb63 DATE ACQ: 31Mar64 ENCL: 00

SUB CODE: PH NR REF SOV: 000 OTHER: 001

2/2
Card



MIRONOV, YE. V.

New method of studying the phosphorus utilization by grapevine. I. N. Simonov and E. V. Mironov. *Vinodelie i Vinogradarstvo S.S.S.R.* 11, [illegible]1951).— With radioactive P the distribution of P in grapevine at different vegetative periods was investigated. The pictures and the data (counts/min./g. dry substance) indicate that P is concd. mainly in the roots, stalks, buds, and the youngest leaves; more radioactive P was present in the stigmas pollinated with a mixt. of pollen derived from the blossoms of 4 different types of grapevine than from the blossoms of only one type. B. Wierbicki

USSR/Biology - Radioactive Isotopes Dec 51

"The Movement of Phosphorus, Tracer in Fruit, Berry, and Citrus Plants." I. N. Simonov, Dr Agr Sci, Ye V. Mironov, All-Union Agr Inst of Correspondence Course Instruction

"Dok v-s Ak Selkhoz Nauk" Vol XVI, No 12, pp 40-43

Describes expts with P_{32} carried out at their institute. Plants were grown in soln contg the tracer and later photographed. Finds there is concn of phosphorus in the flowers of some plants; that phosphorus accumulates in flowers which have been fertilized.

193T2

SIMONOV, I. N.; MIRONOV, YE. V.

Metabolism

Tracer method of studying phosphorous metabolism in forest plants,, Les i step', .., no. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, May 195
~~1953~~, Uncl.

MIRONOV, Yu.K.

Oil potential of the West Siberian Plain near the central Ob' River [with summary in English]. Sov. geol. 2 no.2:7-15 F '59. (MIRA 12:5)

1.Novosibirskoye geologicheskoye upravleniye.
(Ob' Valley--Petroleum geology)

GURARI, F.G.; KAZARINOV, V.P.; KAS'YANOV, M.V.; NESTEROV, I.I.; ROSTOVTSEV, N.N.; ROVNIN, L.I.; RUDKEVICH, M.Ya.; TROFIMUK, A.A.; ERV'YEV, Yu.G.; MIRONOV, Yu. K.

West Siberian Plain is a new oil and gas production center of the U.S.S.R. Geol.i geofiz. no.10:3-15 '61. (MIRA 14:12)

1. Sibirskiy nauchno-issledovatel'skiy institut geologii, geofiziki i mineral'nogo syr'ya, Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk, Tyumenskoye territorial'noye geologicheskoye upravleniye i Novosibirskoye territorial'noye geologicheskoye upravleniye.
(West Siberian Plain—Petroleum geology)
(West Siberian—Gas, Natural)

GRACHEV, ...I.; ANISIMOV, V.V.; ...CYARSKIKH, ...A.; V..ESHCHAKO, I.A.; ...KO, V.A.; ...OV, Y...; ...OV, V.G.; SHA..., D.Z.; IC..INA, ..., ...shchiy red; CHOCHIA, N.G., red.

[Geological and economic efficiency in prospecting for oil and gas in the West Siberian Plain.] Geologo-ekonomicheskaia effektivnost' geologopoiskovykh i razvedochnykh rabot na neft' i gaz v Zapadno-Sibirskoi nizmennosti. Leningrad, Gostoptekhizdat, 1963. 1?? p. (insert. Leningrad. Vses. neftianoi nauchno-issledovatel'skii geologorazvedochnyi institut. Trudy, no.206). (MIRA 17:10)

BOYARSKIKH, G.K.; GRACHEV, R.I.; MIRONOV, Yu.K.

Method of prospecting for possible zones of oil and gas accumulation in the West Siberian Plain. Trudy VNIGRI no.220. Geol. sbor. no.8:327-344 '63. (MIRA 17:3)

BOGOMYAKOV, G.P.; GURARI, F.G.; KAZAKOV, D.Ye.; MIRONOV, Yu.K.; NESTEROV, I.I.; ROZHOK, N.G.; ROVNIN, L.I.; ROSTOVTSEV, N.N.; RUDKEVICH, M.Ya.; TSIBULIN, L.G.; ERV'YE, Yu.G.

Prospecting for oil and gas in the West Siberian Plain. Geol. nefti i gaza 8 no.9:43-48 S '64. (MIRA 17:11)

1. Sibirskiy nauchno-issledovatel'skiy institut geologii, geofiziki i mineral'nogo syr'ya, Tyumenskoye geologicheskoye upravleniye i Novosibirskoye territorial'noye geologicheskoye upravleniye.

L 20893-66 EWT(1) GS/GW

ACC NR: AT5028972 SOURCE CODE: UR/0000/64/000/000/0244/0259

AUTHOR: Gurari, F. G.; Mironov, Yu. K.; Nesterov, I. I.; Rovnin, L. I.; Rostovtsev, N. N.; Rudkevich, M. Ya.; Erv'ye, Yu. G.

ORG: none

47
B11

TITLE: Oil and gas deposits of the west Siberian lowland

SOURCE: International Geological Congress. 22d, New Delhi, 1964. Geologiya nefti (Petroleum geology). Moscow, Izd-vo "Nauka," 1964, 244-259

TOPIC TAGS: geology, physical geology, natural gas, petroleum, fuel, seismology

ABSTRACT: The West Siberian lowland is a gigantic intraplatform depression of about 3.4 million square kilometers. There are two structural stages in its basement. The lower (first) stage is built up of folded structure consolidated in different ages—from Archean to Hercynian. The upper (second) stage is composed of slightly dislocated parageosynclinal Early Mesozoic and Paleozoic deposits which fill up intermontane depressions and form undulated nappes. The cover of the platform is constructed of thick (up to 4000—5000 meters) series of Meso-Cenozoic sandy-clay rocks. In the rocks of the second tectonic stage of the basement numerous oil and gas shows are known, but structural complexity and the great depths at which oil and gas occur make prospecting very difficult. It is usually done together with studies of oil and gas deposits in the platform mantle, which is considered to be

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ACC NR: AT5028972

the most promising oil- and gas-bearing formation. Within the West Siberian lowland two areas with different modes of mantle deposit occurence are distinguished: the outer, with the basement lying at a depth of 2000 meters or less, and the inner, from 2000 to 4000—5000 meters deep. The outer area is characterized by nose-type highs sinking towards the center of the platform. The inner area is characterized by domination of closed structures. A great number of local elevations complicating larger structures is observed within both areas. All of them are very gentle (angle of flanks from 1° to 3°), with the base protrusion high in the core, noticeably flattening out or passing into structural noses or monoclines in the upper horizons of the mantle. Rhythmical alternation of thick, mainly sand-silt series with essentially clay series is characteristic of the mantle deposits. Almost all Jurassic and Lower Cretaceous sand-silt series are regionally petroliferous. In the section the following stratigraphic units are distinguished through productive deposits: 1) The Zavadoukovski clay-silt-sand series of Early-Middle Jurassic partly of Callovian age, up to 1500 meters thick, characterized by a great diversity of facies including continental deposits of various types—littoral, and, less frequently, marine deposits. Numerous small oil inflows and gas outbursts of short duration were obtained from sandstones of the Zavodoukovski series in the central part of the platform. The small Unst-Silga gas condensate field in the northern part of the Tomsk region is confined to this series. 2) The Maryanovka suite of black highly bituminous argillites, up to 100 meters thick, of Late Jurassic, partly Valanginian-Hauterivian age. Its base consists of a series of basal sandstones unpersistent in the strike, with numerous oil and gas shows. In the western Ural

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ACC NR: AT5028972

regions of the lowland, where these sandstones directly overlie the basement rocks and are up to 100 meters thick, 16 gas fields and 3 oil fields have been discovered. 3) The Kulomsino suite represented mainly by Valanginian clay rocks, passing in the northwest into the Alyaska suite of Valanginian-Hauterivian age. In the central regions of the lowland numerous oil shows and two oil fields have been revealed in the sandstones of the upper part of this formation. There are essentially sandstone deposits of the Tara (Upper Valanginian-Lower Hauterivian) and Varta (Hauterivian-Barremian) suites further up, which are the main productive formations in the central and northern regions of the lowland. Three oil fields and two gas fields, including large ones, have been discovered there. In the overlying Cretaceous, Paleogene, and Neogene sandy-clay deposits no oil or gas field is known. In the Okhteurevsk area a subcommercial gas spout has been obtained from Senonian sandstones. Oil and gas shows in Cretaceous deposits have been observed in a number of wells. Geochemical investigations have shown that the content of organic carbon and bitumen increases from marginal zones toward the centre of the lowland in all productive strata of Jurassic and Lower Cretaceous age. The degree of bitumen reduction rises, and the degree of oil hypergenesis decreases in the same direction. The degree of mineralization and metamorphism of underground waters also rises from the marginal zones to the center of the lowland. A deviation from normal is observed in the Surgut district, where the degree of mineralization of Jurassic and Lower Cretaceous waters is reduced, and Neocomian oils have undergone considerable cryptohypergenesis. A study of oil and gas reservoirs in Jurassic and Lower Cretaceous deposits has shown deterioration of their properties from the marginal

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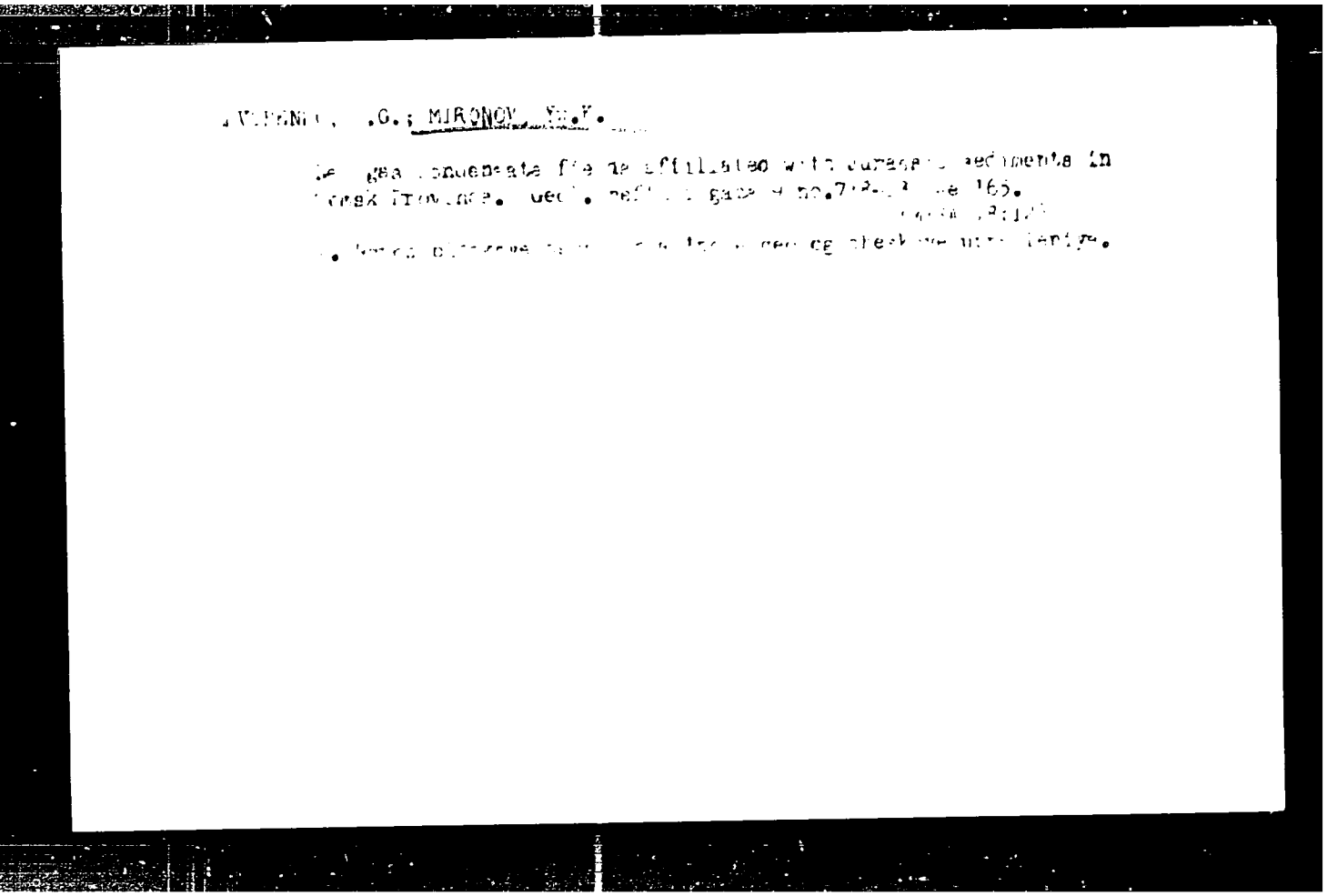
ACC NR: AT5028972

zones of the lowland towards its central regions. At the same time it has been established that paleotectonic conditions greatly affect the properties of reservoirs in Neocomian deposits. The thickest, highly permeable sand beds overlay arches of large consedigenous uplifts. A map of supposed oil and gas reserves on the West Siberian platform has been prepared, based on the results of an analysis of the data available on facial characteristics of rocks, hydrogeology, reservoir properties, geochemistry, distribution of the already known oil and gas fields and shows, etc. The central and northern regions of the lowland are the most promising areas. The data available indicate that the West Siberian lowland is one of the world's new oil and gas provinces. Orig. art. has: 3 figures. [Author's abstract.]

SUB CODE: 08/ SUBM DATE: 21Nov64/

Card 4/4 ULR



S/137/62/000/003/090/191
A006/A101

AUTHORS: [illegible], V.Ya., [illegible], Yu.M.

TITLE: The [illegible] investigation of the process of pipe expansion by diagonal [illegible]

PERIODICAL: [illegible], Metallurgiya, [illegible] 3, [illegible] (V sb. "[illegible] trud", [illegible], Khar'kov, Metallurgizdat, [illegible] [illegible] - 71)

TEXT: [illegible] theoretically investigating the [illegible] and kinematic [illegible] of the process of pipe expansion by diagonal [illegible]. A method is [illegible] for the investigation of pipe expansion by diagonal [illegible], which [illegible] to select the most efficient [illegible] for obtaining large diameter [illegible] by [illegible] the basic technological conditions of the process [illegible]. Functions [illegible], where K is the ratio of the initial radius in the "geometrical pick" to the shortest distance between the roll of the axes and the blank; [illegible] is the flattening angle, are "characteristic" functions of the pipe expansion process under one or several basic conditions.
[Abstracter's note: Complete translation] K. Ursova

Card 1/1

[illegible]

AUTHORS: Fomichev, I. A., [illegible], Ostrem[illegible], V. [illegible]

TITLE: The outlook for raising [illegible]

PERIODICAL: Referativnyy zhurnal, Metallurgiya, [illegible]
("Sb. nauchno-tekhn. tr. [illegible] metallurgii [illegible]
no. 3, [illegible])

TEXT: Some results are presented of an investigation [illegible] number of pipe mills with the purpose of producing seamless pipes [illegible] D/S ratio. The tests confirmed the theoretical thesis on the effectiveness of producing finished pipes on skewed rolling mills rather than on automatic [illegible]. A modernized schematic diagram of automatic mills and a layout of equipment of the new automatic mills being designed are given.

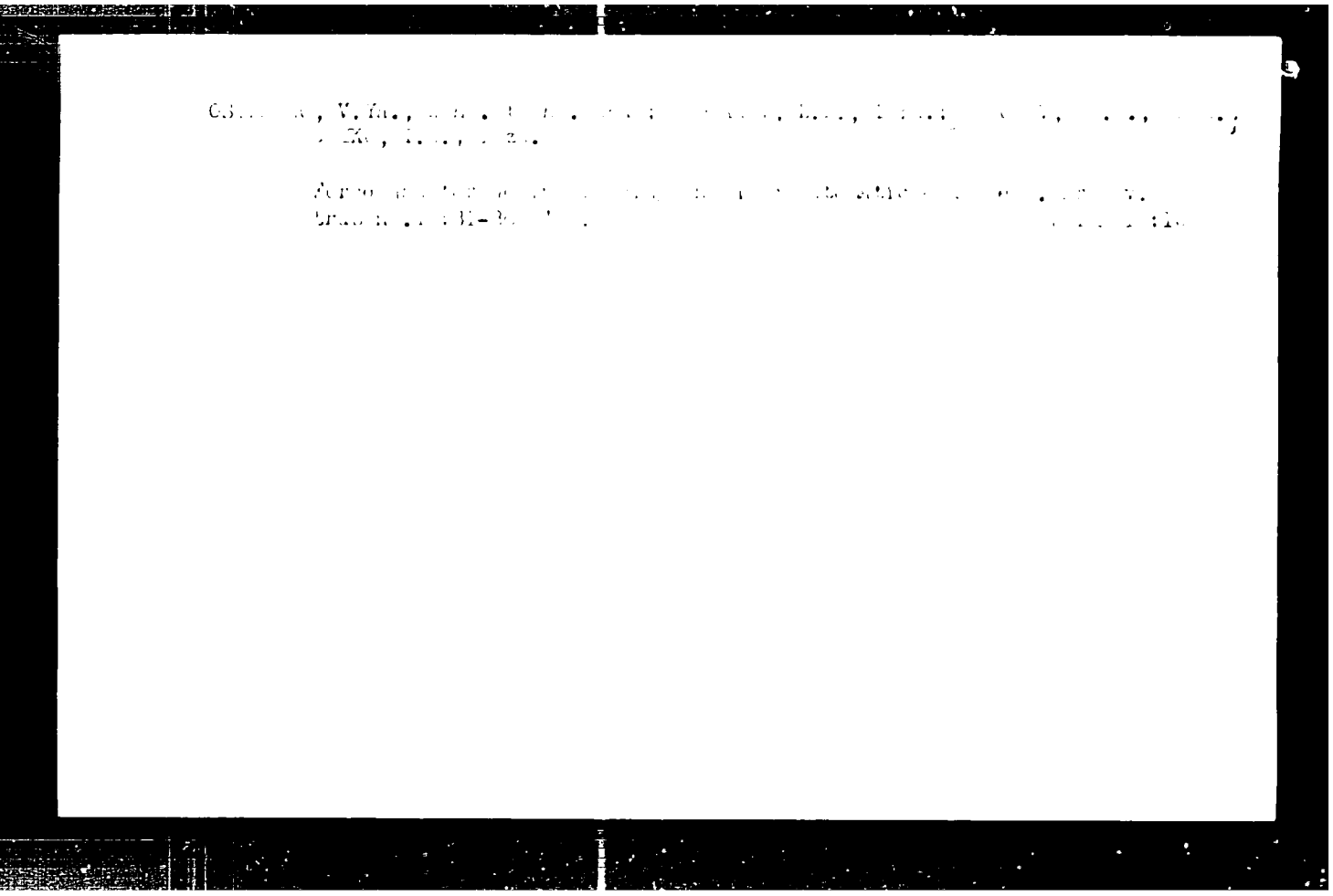
A. [illegible]

[Abstracter's note: Complete translation]

Card 1/1

OSTRENKO, V.Ya., kand. tekhn. nauk; [illegible], ..., inzh.; [illegible], I.K., inzh.

Theoretical and experimental determination of the force necessary for mandrel drawing in a pilgrim mill. Proizv. trub no.10:7-14 '63. (MIRA 17:10)



ACCESSION NR: AR4015542 S/0137/63/000/011/D045/D045

SOURCE: RZh. Metallurgiya, Abs. 11D260

AUTHOR: Ostrenko, V. Ya.; Mironov, Yu. M.; Geyko, I.K.

TITLE: A new method of producing large-diameter seamless pipes

CITED SOURCE: Sb. Trubn. proiz-vo Ukrainy*, Kiyev, 1963, 62-66

TOPIC TAGS: pipe, seamless pipe, large-diameter pipe

TRANSLATION: The authors present an analysis of existing methods of slanted-roll expansion. The results of the analysis made possible the development of a new method of expansion which allows the production of large-diameter thin- and especially thick-walled pipes, as well as pipes with external longitudinal ribs. The basic advantage of this method is the application of compressive forces on all sides without the involvement of any expansive stresses on sections lying outside the deformation focus formed by the closed contour of the outer shaping surface and the inner working rollers. This special feature makes possible the rolling of thin-walled pipes even from low-plasticity materials, which is very

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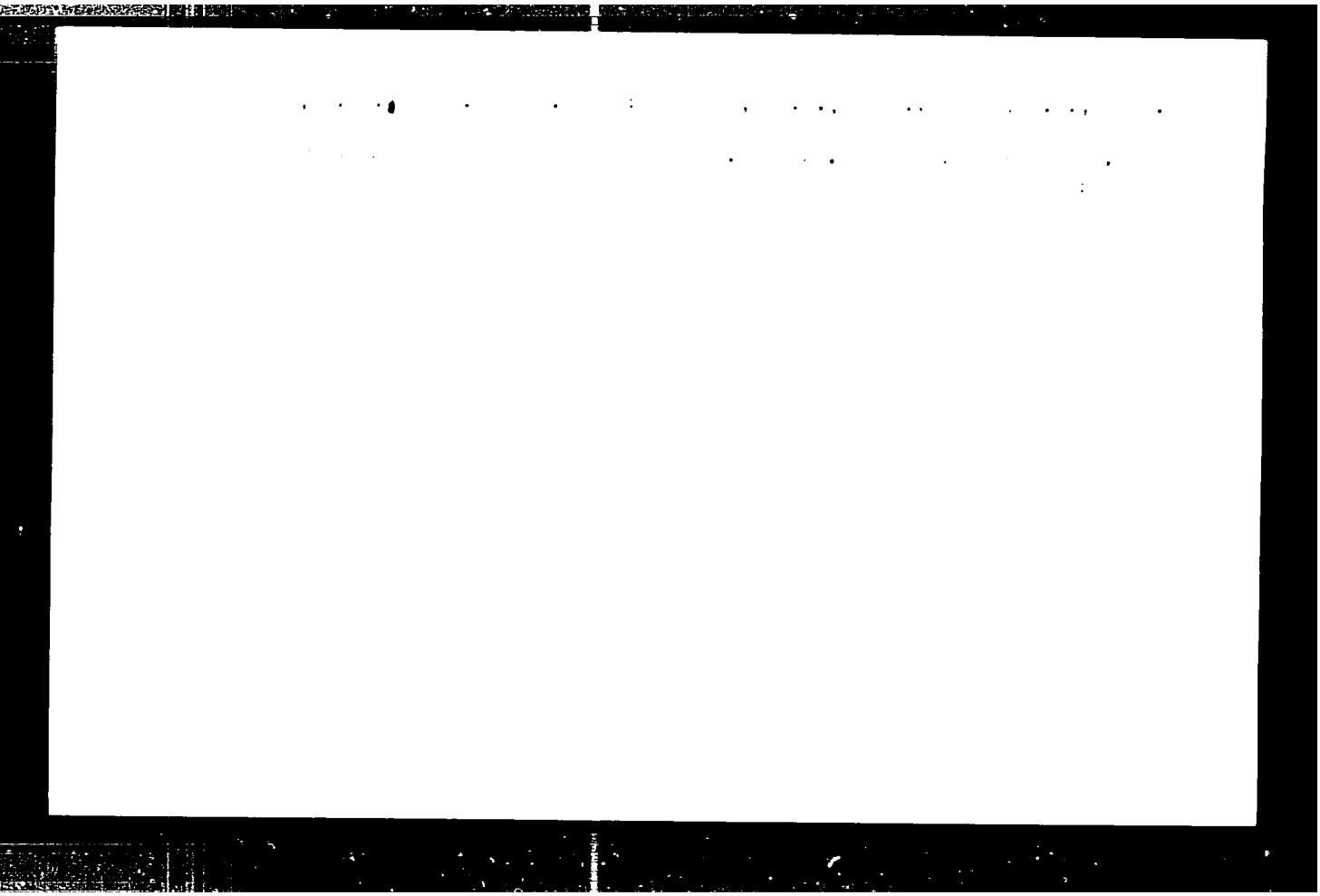
ACCESSION NR: AR4015542

difficult with existing methods. In addition, in products made by the new method, the outer surface will be of relatively high quality; this is assured by the conditions of deformation on a smooth surface with considerable feed force. An important feature of the new method of expansion is the absence of ovalization of the product during the deformation process. The authors give a description of the process and a pipe rolling machine for carrying it out. K. Ursova.

DATE ACQ: 09Dec63 SUB CODE: ML ENCL: 00

Card 2/2



L 57526-65 EWT(m)/EWP(t)/EWP(b) JD

ACCESSION NR: AR5015151 UR/0137/65/000/005/V046/V046

SOURCE: Ref. zh. Metallurgiya, Abs. 5V303

13
B

AUTHOR: Klyuyev, M. M.; Mironov, Yu. M.

TITLE: Some questions of drop transfer in melting a metal under a flux

CITED SOURCE: Elektrotermiya. Nauchno-tekhn. sb., vyp. 39, 1964, 21-24

TOPIC TAGS: melting, flux drop transfer, drop formation, electric parameter, electric furnace

TRANSLATION: An investigation of the influence of various technological factors on drop transfer in a metal was made in an industrial furnace. Analysis of the results showed that drop formation depends on the melting time. As the bath is heated the period of drop formation is stabilized. Electromagnetic rotation of the metal increases the dispersion of the drop distribution, while their formation time is increased. All other conditions being equal, the weight of a drop increases with rotation of the metal and depends on the diameter of the electrode. The dependence of the chracteristics of drop transfer on the electrical parameters of the

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ACCESSION NR: AR5015151

process was investigated in a type A-550U laboratory furnace. It was established that the quantity of drops remains constant with an increase of the current up to a determined value in each stage of the transformer voltage. With an increase in the current, the frequency of the drops rises sharply with an increased melting speed of the electrode. The weight of a drop does not depend on the voltage. The main influence on drop formation during the melting of a metal under a flux is exerted by the thermal conditions of the melting. The same large drops are observed with arc discharges which occur during drop short circuits. Jet transfer conditions are unattainable in the melting of a metal under a flux. In industrial furnaces with an electrode diameter equal to or greater than 200 mm, under the melting conditions used at the present time, transfer of the metal is of the drop type. Orig. art. has: 4 figures, 2 tables

SUB CODE: MM, EE ENCL: 00

Card 2/2

L 62942-65 EPF(n)-2/EPA(s)-2/EWP(k)/EWT(d)/EWT(m)/EWP(h)/EWP(b)/EWP(l)/EWP(v)/
ACCESSION NR: AR5019135 EWP(t) WW/JD/ UR/0137/65/000/007/V037/V037
JG

SOURCE: Ref. zh. Metallurgiya, Abs. 7V261

AUTHOR: Mironov, Yu. M.; Klyuyev, M. M.

TITLE: Choice of a criterion for evaluating the operation of a system of automatic control for the process of remelting a metal under a flux

CITED SOURCE: Elektrotermiya. Nauchno-tekhn. sb., vyp. 42, 1964, 14-16

TOPIC TAGS: metal melting, automatic control system, melting furnace

TRANSLATION: Investigations carried out in laboratory and industrial furnaces showed that heat efficiency depends only slightly on remelting conditions and on the height of the layer of flux, but is basically determined by the geometry of the thermal field. An investigation of ingot microstructure showed that the overall depth of the liquid metal bath is determined by the rate of melting of the metal. The coefficient of the form of the liquid bath is determined by the characteristics of the thermal field of the slag bath--by the distance between the electrodes, and

Card 1/2

L 62942-65
ACCESSION NR: AR5019135

depends only slightly on remelting conditions. The criterion for evaluation of the operation of a system for automatic control of the process of remelting a metal under a flux is the stability of the melting rate and the distance between the electrodes, which determines the stability of the quality of the metal. Orig. art. has: 4 figures, 6 literature tables. D. Kashchayeva

SUB CODE: MM ENCL: 00

Card 2/2

L 56020-65 EWT(m)/EWP(t)/EWP(b) JD

ACCESSION NR: AP5013320 UR/0148/65/000/005/0051/0056 15
669.187.25 14
B

AUTHOR: Mironov, Yu. M.; Klyuyev, M. M.; Topilin, V. V. 16

TITLE: The effect which electrical conditions during electroslag melting have on the melting rate of the electrode metal and the metal bath characteristics

SOURCE: IVUZ. Chernaya metallurgiya, no. 5, 1965, 51-56

TOPIC TAGS: electroslag melting, consumable electrode

ABSTRACT: The authors have determined parameters relating the rate of melting to various characteristics of the melts such as depth of conical and cylindrical parts and volume. The specific power input P_0 is given as the quotient of the heat evolved in the slag and the distance between the electrode tip and the melt. A laboratory electroslag furnace having a 32 mm electrode and a 100 mm ingot mold was used. Current was varied from 1000 to 2000 amps and voltage varied in steps--46.1, 41.1, and 36.2 V. The volume, and conical and cylindrical heights rise with increasing P_0 although a discontinuity corresponding to the onset of arcing is noticed for the

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L 56020-65

ACCESSION NR: AP5013320

P_0 versus melt volume curve. This occurs after saturation of heat content in the slag which gives the optimal form of metal bath. The depth of liquid metal was found to be much more sensitive to the melting rate before heat saturation in the slag since slag is the major heat transfer agent. When directional solidification is desired, the important parameter is the relation between cylindrical and conical sections of the melt and is not related to melt size. The productivity was found to increase while energy expenditure decreased if voltage was decreased while maintaining constant current. Orig. art. has: 5 figures, 4 formulas, 1 table.

ASSOCIATION: Zavod "Elektrostal'" ("Elektrostal'" Plant)

SUBMITTED: 04Sep63 ENCL: 00 SUB CODE: MM, IE

NO REF SOV: 005 OTHER: 000

Card 2/2

L 45977-66 EWT(m)/EWP(t)/ETI/EWP(k) JD

ACC NR: AR6028428 SOURCE CODE: UR/0137/66/000/005/V041/V042

AUTHOR: Mironov, Yu. M.

TITLE: Analysis of the instability in conditions for shielded melting of metal

SOURCE: Ref. zh. Metallurgiya, Abs. 5V266

REF SOURCE: Elektrotermiya. Nauchno-tekhn. sb. vyp. 48, 1965, 27-29

TOPIC TAGS: metal melting, electroslag melting

ABSTRACT: The instability of melting conditions in an electroslag furnace arises because of the instability of electroslag conditions of the furnace. Moreover, the change during melting in chemical composition and height of the flux layer, owing to its evaporation and consumption for the formation of crust on the ingot surface, leads to a change in melting conditions, i. e., to instability of metal quality over the height of ingots. The greatest effect on the stability of metal quality is exerted by the instability of electroslag conditions near the lower (with respect to current) limit of the stability of the process. For ingots with a diameter < 250 mm, it is suggested that distances between electrodes be somewhat less than optimum, while for a diameter > 250 mm, distances between electrodes should

Card 1/2 UDC: 669.187.2:621.745.55

L 45977-66
ACC NR: AR6028428

be greater than optimum. D. Kashayeva. Orig. art. has: 2 figures and 2 tables. [Translation of abstract] [NT]

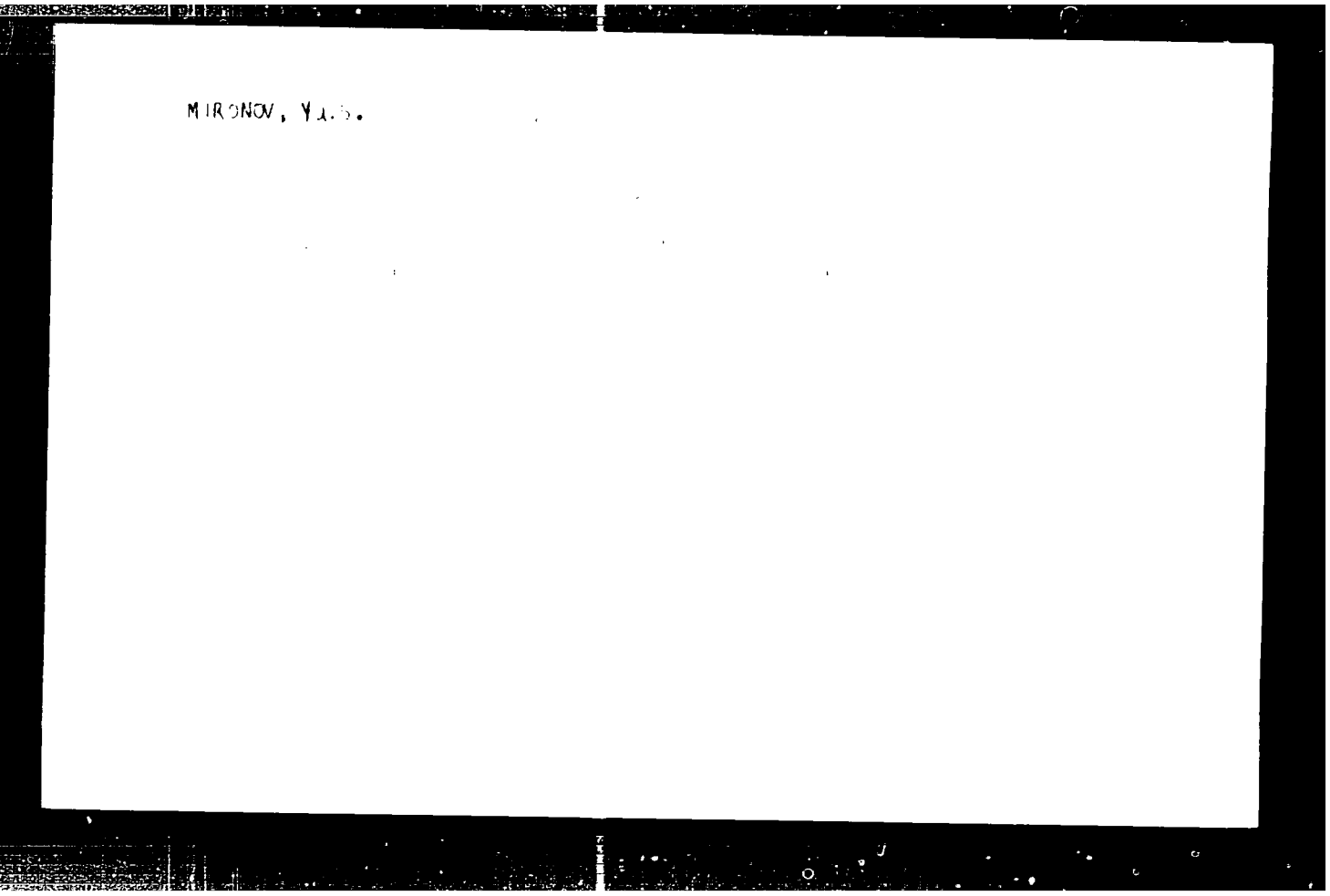
SUB CODE: 11/

Card 2/2

MIRONOV, Yu.P.

Relict dikes as a source of xenoliths in granitoid rocks as revealed by the rheomobilization of granite diorites. Biul. MOIP. Otd. geol. 40 no. 6:141 N-D '65 (MIRA 19:1)

1. Submitted April 22, 1965.



S/190/61/003/001/009/020
B119/B216

AUTHORS: Korshak, V. V., Vinogradova, S. V., Valetskiy, P. M., Mironov, Yu. V.

TITLE: Heterochain polyesters. XXX. A study on rules in polycondensation of acid chlorides of dicarboxylic acids with dihydroxy phenols in high-boiling solvents

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 1, 1961, 66-71

TEXT: This is a continuation of the publications on the subject mentioned in the title. The present work studies the influence of solvents, temperature, reaction time, concentration of initial substances and their relative proportions, and the presence of other substances on the molecular weight of the condensation product. The acid dichloride of terephthalic acid (A) and 2,2-di(4-hydroxyphenyl)-propane (B) were used as initial substances. The polycondensation reactions were performed in special test tubes for condensation (heated in an aluminum block) or in round-bottomed flasks with mechanical stirrer (heating in silicone oil

Card 1/3

Heterochain polyesters. XXX. A study on... S/190/61/003/001/009/020
B111/B216

bath) in a nitrogen stream. The molecular weight of the individual condensates was determined from the viscosity of a 5% solution of the condensate in cresol. The experiments were carried out at 220° and 240°C, at reaction times of 10 hr and less. The solvents used were ditolyl methane, "dinyl", tetralin, dimethyl aniline, tetrachloro ethane and pyridine. The concentrations of the initial substances (in equimolar proportions) were varied between 0.0[illegible] and 1.0 mol/l. The molar ratio of the initial substances varied from 0.5 to 2.5. The following substances were tested for catalytic activity by adding them to the reaction mixture: tetraethylammonium bromide, tetramethylammonium bromide, trimethyl-amine hydrochloride, triethyl amine, dimethyl aniline, pyridine, diethyl aniline, ammonium chloride, p-toluenesulfonic acid, $ZnCl_2$, $Zn(OCOCH_3)_2$, annealed PbO and Al_2O_3, and $ZnCl_2$, $MgCl_2$, $CaCl_2$, TiO_2, anhydrous $AlCl_3$, $TiCl_4$, metallic Na and Mg. The following reaction conditions were found to be optimum: 220°C, initial substances at a molar ratio of 1:1, a concentration in the reaction mixture of 0.6 mol/l, ditolyl methane as solvent and a reaction time of~5 hr. Longer reaction times and higher temperatures resulted in rather lower molecular weight.

Card 2/3

Heterochain polyesters. XXX. A study on... S/190/61/003/001/009/020
B119/B216

None of the additives exhibited special catalytic activity. The best results were obtained in presence of PbO, Al_2O_3 and TiO_2. Intrinsic viscosity: 0.59, 0.46, 0.58. Yield calculated for initial substances: 82.0, 77.[illegible], 7?%. Among other publications, the authors mention a work by the first-mentioned author in collaboration with V. V. Golubev. There are 1 figure, 3 tables, and 17 references: 12 Soviet-bloc and 5 non-Soviet-bloc.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elemental Organic Chemistry, AS USSR). Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemical-technological Institute imeni D. I. Mendeleyev)

SUBMITTED: May 30, 1960

Card 3/3

KORSAK, V.V. [Korshak, V.V.] [illegible]; ADOVA, S.V. (Moskva); VALECKIJ, P.M. [Valetskii, P.M.] (Moskva); MIRONOV, Yu.V. [Mironov, Yu.V.] (Moskva)

Copolyarylates of aromatic [illegible] acids, dihydroxy diphenyl propane and trimethylol [illegible]. Khim prom 13 no.9:480-[illegible] S '63.

L 36374-66 EWP(j)/EWT(m) RM

ACC NR: AP6008500 SOURCE CODE: UR/0062/66/000/001/0070/0076

AUTHOR: Vinogradova, S. V.; Korshak, V. V.; Valetskiy, P. M.; Mironov, Yu. V.

ORG: Institute of Heteroorganic Compounds, Academy of Sciences, SSSR (Institut elementoorganicheskikh soyedineniy, Akademii nauk SSSR); Moscow Chemical Technology Institute im. D. I. Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut)

TITLE: Heterochain polyesters. Communication 57. Kinetics of the polycondensation of acid chlorides of aromatic dicarboxylic acids with polyhydric aliphatic alcohols

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 1, 1966, 70-76

TOPIC TAGS: chemical kinetics, aromatic polycarboxylic acid, aliphatic alcohol, polycondensation, carboxylic acid chloride, HYDROGEN CHLORIDE

ABSTRACT: The kinetics of the polycondensation of the acid chlorides of terephthalic and isophthalic acids with trimethylolethane and trimethylolpropane are investigated with respect to the evolution of hydrogen chloride during the reaction. Polycondensation is carried out in a bowtherm medium in a stream of oxygen-free nitrogen whose delivery rate was controlled by a flow meter. The kinetics of polycondensation are studied in the temperature range of [illegible]. In all experiments the quantity of the initial substances and their concentrations are rigorously constant and the ratio is equimolar. The hydrogen chloride

Card 1/2 UDC: 531.1+542.952+547.58

L 36974-66

ACC NR: AP6008500

absorped in two parallel-connected systems, each of which consists [illegible] filled with a 0.5 N solution of NaOH. After absorption the alkaline solut[illegible] were titrated with 1 N solution of H_2SO_4. The data obtained from the investigat[illegible] gave grounds to assume that the surfaces of the mixed polyarylates obtained [illegible] basis of diatomic phenols and polyhydric aliphatic alcohols should be perfo[illegible] in two stages. The first stage is the polycondensation of diatomic phenol with the acid chloride of the dicarboxylic acid which would be carried out at elevated temperatures (up to 220C). The second stage (after all the initial diatomic phenol had entered into the reaction) is the polycondensation of the polyarylate formed with the aliphatic polyhydric alcohol. This stage of the process must be accomplished at lower temperatures (110–130C) which permits achieving a sufficiently high degree of completeness of the reaction without premature hardening of the product formed. In conclusion, the authors expres[illegible] their gratitude to associates of the Laboratory of VNII of Petroleum Chemistry (laboratoriya VNIINeftekhima), headed by Comrade D. M. Rudkovskiy, for making available the trimethylolethane and the trimethylolpropane. Orig. art. has: 2 tables and 3 figures.

SUB CODE:07/ SUBM DATE: 28Aug63/ ORIG REF: 002/ OTH REF: 003

Card 2/2 [illegible]

ACC NR: AP6029918 (A) SOURCE CODE: UR/0413/66/000/015/0088/0088

AUTHORS: Mironov, Yu. V.; Kamenskiy, I. V.; Korsunak, V. V.; Glusko, S. A.

ORG: none

TITLE: A method for hardening unsaturated polyester resins. Class 39, No. 184442

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 88

TOPIC TAGS: polyester, resin, copolymer, polyester plastic

ABSTRACT: This Author Certificate presents a method for hardening unsaturated polyester resins by copolymerizing them with cross-linking agents in the presence of an oxidizing-reducing system. To increase the resistance to deformation and the mechanical strength of the hardened polyesters at high temperatures, polyfunctional furane compounds (such as furfurylacrylate) are used as cross-linking agents.

SUB CODE: 07,11/ SUBM DATE: 21Apr65

Card 1/1 UDC: 678.674.028.294

AP6039923 (A) SOURCE CODE: UR/0413/66/000/015/0089/0089

AUTHOR: Korshak, V. V.; Vinogradova, S. V.; Valetskiy, P. M.; Salazkin, S. N.; Mironov, Yu. V.

ORG: none

TITLE: Method for obtaining polyesters. Class 39, No. 184447

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 89

TOPIC TAGS: polyester plastic, polyglycol compound, polymer cross linking, polymer, glycol, oligomer

ABSTRACT: The Author Certificate presents a method for obtaining polyesters after [illegible] described in Author Certificate No. [illegible]. To prevent a premature cross-linking of the polymer and to increase the solubility and fusibility of the [illegible], the process is carried out in two stages. The first stage consists of the interaction between the chloroanhydrides of dicarboxylic acids and dihydroxy [illegible]; the second stage is of the reaction of the oligomers, obtained in the first stage, with aromatic (or cycloaliphatic) glycols.

SUB CODE: 11/ SUBM DATE: 10Jan64

Card 1/1

UDC: 678.673

L 33086-66 EWT(1)/T JK
ACC NR: AP6024120 (N) SOURCE CODE: UR/0402/66/000/001/0096/0099

AUTHOR: Gnuni, G. M.; Dzagurov, S. G.; Kamonenko, L. L.; Mironova, A.

ORG: Institute of Poliomyelitis and Viral Encephalitides, AMN SSSR, Moscow (Institut poliomielita i virusnykh entsefalitov AMN SSSR)

TITLE: Method of growing tissue cultures and viruses in revolving vessels

SOURCE: Voprosy virusologii, no. 1, 1966, 96-99

TOPIC TAGS: virology, tissue physiology, medical laboratory instrument, histology

ABSTRACT: The ordinary method of growing monolayer cultures of trypsinized cells leaves some 60 to 70% of the available area of the vessel unused, thus reducing the possibility of obtaining a large quantity of the cell mass participating in the formation of virus particles. The authors designed an apparatus in which flasks or bottles with a suspension of monkey kidney cells or human diploid cells in a culture medium revolve at the rate of 20 revolutions per hour. They found that the rotation of the vessels had no effect on adherence of the cells to the surface or on their growth. The mean index of proliferation (ratio of number of cells grown to the number inoculated) was about 1, the norm for the given types of tissue. There was a marked increase in the useful area occupied by the monolayer, decrease in consumption of the culture medium, and greater concentration of poliomyelitis virus (human diploid cells). Orig. art. has: 1 figure and 5 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 07Jun65 / ORIG REF: 004 / OTH REF: 005

Card 1/1 BK UDC: 576.858.093.1+578.085.23

0915 1696

SLONEVSKIY, S.I., doktor meditsinskikh nauk; MIRONOVA, A.A., kandidat meditsinskikh nauk

Studies on microclimate of clothing. Trudy AMN SSSR 30:7-35 '53.
(CLOTHING, microclimate) (MLRA 8:1)

MINKH, A.A.; VADKOVSKAYA, Yu.V., prof.; MIRONOVA, A.A., kand.med.nauk

Hygienic study of fabrics used for skiers' clothing [with summary in English]. Gig. i san. 23 no.2:27-33 F '58. (MIRA 11:4)

1. Iz TSentral'nogo instituta fizkul'tury i Instituta obshchey i kommunal'noy gigiyeny AMN SSSR. 2. Chlen-korrespondent AMN SSSR (for Minkh)

(CLOTHING,
optimal fabrics for skiers' clothing (Rus))

MINKH, A.A.; VADKOVSKAYA, Yu.V., prof.; MIRONOVA, A.A., kand.med.nauk

Hygienic evaluation of modern skiing outfits. Gig. i san. 25 no. 12:39-45 D '60. (MIRA 14:2)

1. Iz TSentral'nogo ordena Lenina instituta fizicheskoy kul'tury i instituta obshchey i kommunal'noy gigiyeny imeni A.N. Sysina AMN SSSR.

(CLOTHING, COLD WEATHER) (SKIS AND SKIING)

VADKOVSKAYA, Yu.V., prof.; MIRONOVA, A.A., kand.med.nauk; RAPOPORT, K.A., kand.biolog.nauk

Hygienic properties of clothing made from linen fabrics. Tekst.prom. 22 no.1:24-27 Ja '62. (MIRA 15:2)

1. Institut obshchey i kommunal'noy gigiyeny imeni A.N.Sysina Akademii meditsinskikh nauk SSSR.
(CLOTHING AND DRESS) (LINEN)

MINKH, A.A.; VADKOVSKAYA, Yu.B., prof.; MIKONOVA, A.A., kand.med.na k

Rationalization of sports apparel for ski racers. Gig. i san. 27 no.3:40-45 Mr '62. (MIRA 15:4)

1. Iz TSentral'nogo instituta fizicheskoy kul'tury i Institut ta obshchey i kommunal'noy gigiyeny imeni A.N.Sysina AMN SSSR.
2. Chlen-korrespondent AMN SSSR (for Minkh).
(SKIS AND SKIING) (CLOTHING, COLD WEATHER)

ALEKSEYEV, G.A., inzh.; MIRONOV, A.A., inzh.; TETERIN, M.A., inzh.

Concerning some factors of the corona resistance of film-type electric insulating materials. Vest. elektroprom. 34 no.3: 42-45 Mr '63. (MIRA 16:8)

(Corona (Electricity))
(Electric insulators and insulation)

MARSHAK, I.S.; VASIL'YEV, V.I.; MIRONOVA, A.I.; IVANOV, V.P.; VDOVCHENKO, R.G.

New pulse lamps. Usp.nauch.fot. 6:43-52 '59. (MIRA 13:6)
(Electric discharge lighting)

MALYUGINA, L.L.; MIRONOVA, A.I.; FEDOROV, V.K.; SHABAD, L.M.

Significance of typologic characteristics of the higher nervous function in the formation and development of tumors produced by carcinogens in mice. Biul. eksp. biol. i med. 38 no.9:65-68 S '54. (MLRA 7:12)

1. Is laboratorii eksperimental'noy genetiki vysshey nervnoy deyatel'nosti (zav. V.K.Krasuskiy) Instituta fiziologii imeni I.P.Pavlova (dir. akademik K.M.Bykov) AN SSSR i laboratorii eksperimental'noy onkologii (zav. chlen-korrespondent AMN SSSR prof. L.M.Shabad) Instituta onkologii (dir. chlen-korrespondent AMN SSSR prof. A.I. Serebrov) AMN SSSR, Leningrad.

(NEOPLASMS, experimental,
higher nervous funct. in, role in form. & develop. of tumors)

(CENTRAL NERVOUS SYSTEM, function tests,
typing of higher nervous funct., role in form & develop of exper. tumors)

MIRONOVA, A. I.

USSR/General Problems of Pathology - Tumors. T-5

Abs Jour : Ref Zhur - Biol., No 1, 1958, 3123

Author : Vol'fson, N.I., Mironova, A.I.
Inst : -
Title : The Local Effect of Embichin after Intraarterial and Intravenous Administrations.

Orig Pub : Vopr. Onkologii, 1957, 3, No 1, 85-90

Abstract : When embichin was administered to rabbits in a dosage of 1 mg/kg into the external iliac artery or the lower portion of the abdominal aorta, and when corresponding veins were compressed for 5-7 minutes, it was possible to avoid depression of the circulatory system. It was impossible to achieve this when the same dose was injected into, for example, the marginal vein of the rabbit's ear without a brief compression of the other vessels.

Card 1/1

E CERPTA MEDICA Sec 16 Vol 7/5 Cancer May 59

1566 **The significance of typological peculiarities of the higher nervous functions in the origin and development of mammary tumours in mice (Russian text)** MALTUGINA I. L. MIRONOVA A. I. FEDOROV V. K. and SCHAVO L. M. Inst. of Oncol. USSR Acad. of Med. Sci. Leningrad *Byull. Eksper. Biol. i Med.* 1958, 45/6 (85-89) Tables 4

In a previous study the authors had shown the existence in black mice of strain C 57 of certain relations between the motility of nervous processes and the stability of the organism against cancerogenic stimuli. The present experiments were performed on 112 female mice of the high-cancer strain C3HA, in which spontaneous tumours of the breast developed in 47.7%, after 7-12 months. During the experiment the animals were given a special diet for 2-4 months (25 calories a day, of which only 18% consisted of protein). Two conditioned reflexes according to Pavlov were formed and then reversed again: a positive one on a bell signal and a negative one on a light stimulus. The motility of the nervous process was evaluated on the basis of the speed of this reversal. After the 5th month the mice were carefully observed and the tumours which developed were registered and histologically examined after death (chiefly adenocarcinomas and small-cell carcinomas). Part of the mice were kept singly in cages (individual mice), the others together (group mice). The way in which they were kept had no influence on the development of the tumours. In the individual mice, on the other hand, the motility of the nervous process was significantly greater than in the group mice. Analysis of the experiments shows the existence of definite relations between the motility of the nervous process and the stability of the organism against cancerogenic factors; the same holds true for the formation of metastases (more frequent in mice with inactive nervous processes). Although tumours are observed less often in mice with increased motility of the nervous activity, they occur earlier and the disease takes a more rapid course.

Brandt - Berlin

MIRONOVA, A.I. (Leningrad, 28, Liteynyy pr. d.2[illegible], kv.411)

Studying the possible blastomogenic action of [illegible]
synthetic liquid fuel production. Vop.onk. [illegible]

1. Iz laboratorii eksperimental'noy onkologii (zav. - chlen-korrespondent AMN SSSR prof. L.M. Shabad) Instituta onkologii AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof. A.I. Serebrov).

(PETROLEUM PRODUCTS,
artif. liquid fuel products, blastomogenic action (Rus))
(COAL TARS
same)
(CARCINOGENS
same)

KAUFMAN, B.D. (Leningrad, K-196, Kovocherkasskiy pr., 61/20, kv.20); MIRONOVA, A.I. (Leningrad, D-20, Liteynyy pro. 26, kv.411); SHABAD, L.M. (Moskva, D-57, Kovopeschanaya ul., 3, kv.64)

Study on the frequency of malignant tumors in workers of certain branches of food industry. Vop.onk. 5 no.9:314-319 '59. (MIRA 12:12)

1. Iz laboratorii eksperimental'noy onkologii (zav. - chlen-korrespondent AMN SSSR prof. L.M. Shabad) i Orgmetodotdela (zav. - starshiy sotrudnik kand.med.nauk A.V. Chaklin) Instituta onkologii AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof. A.I. Serebrov).
(FOOD PROCESSING INDUSTRY)
(NEOPLASMS statist.)

GRITSYUTE, L.A.; MIRONOVA, A.I.

Carcinogenic properties of tobacco tars; results of animal experiments.
Vop. onk. 6 no. 8:25-33 Ag '60. (MIRA 14:1)
(TOBACCO--PHYSIOLOGICAL EFFECT)
(TAR--PHYSIOLOGICAL EFFECT)
(CARCINOGENS)

MIRONOVA, A.I.

Effect of extracts from the roots of ginseng and Eleuthorococcus on the growth of Ehrlich's carcinoma. Vop. onk. 9 no.1:42-44 '63
(MIRA 16:5)

1. Iz laboratorii eksperimental'noy onkologii (zav.-zasluzhennyy deyatel' nauki prof. I.V.Lazarev) Institua onkologii AMN SSSR (direktor deystvitel'nyy chlen AMN SSSR prof. A.I.Serebrov).
(CANCER) (GINSENG) (ELEUTHEROCOCCUS)

MALYUGINA, L.L.; [illegible], [illegible]; [illegible], Vik. K.; [illegible], L.M.

Signif[illegible] of [illegible] of higher nervous activity in the genesis [illegible] tumors [illegible] by [illegible] substances. [illegible]

1. Laboratoriya [illegible] Instituta fiziologii [illegible] eksperimental'noy onkologii instituta [illegible].

MIROAEEVA, A.K.

Change in the breaking strength of polyvinyl chloride due to introduction of two plasticizers. R. I. Fel'dman and A. K. Mironova, *Colloid J.* (U.S.S.R.) 17, 449-51(1955) (Engl. translation).—See *C.A.* 50, 4562g. B. M. R.

2. M. A. YOUTZ
10 copies

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R00113

MIRONOVA, A.K.

2 may 5

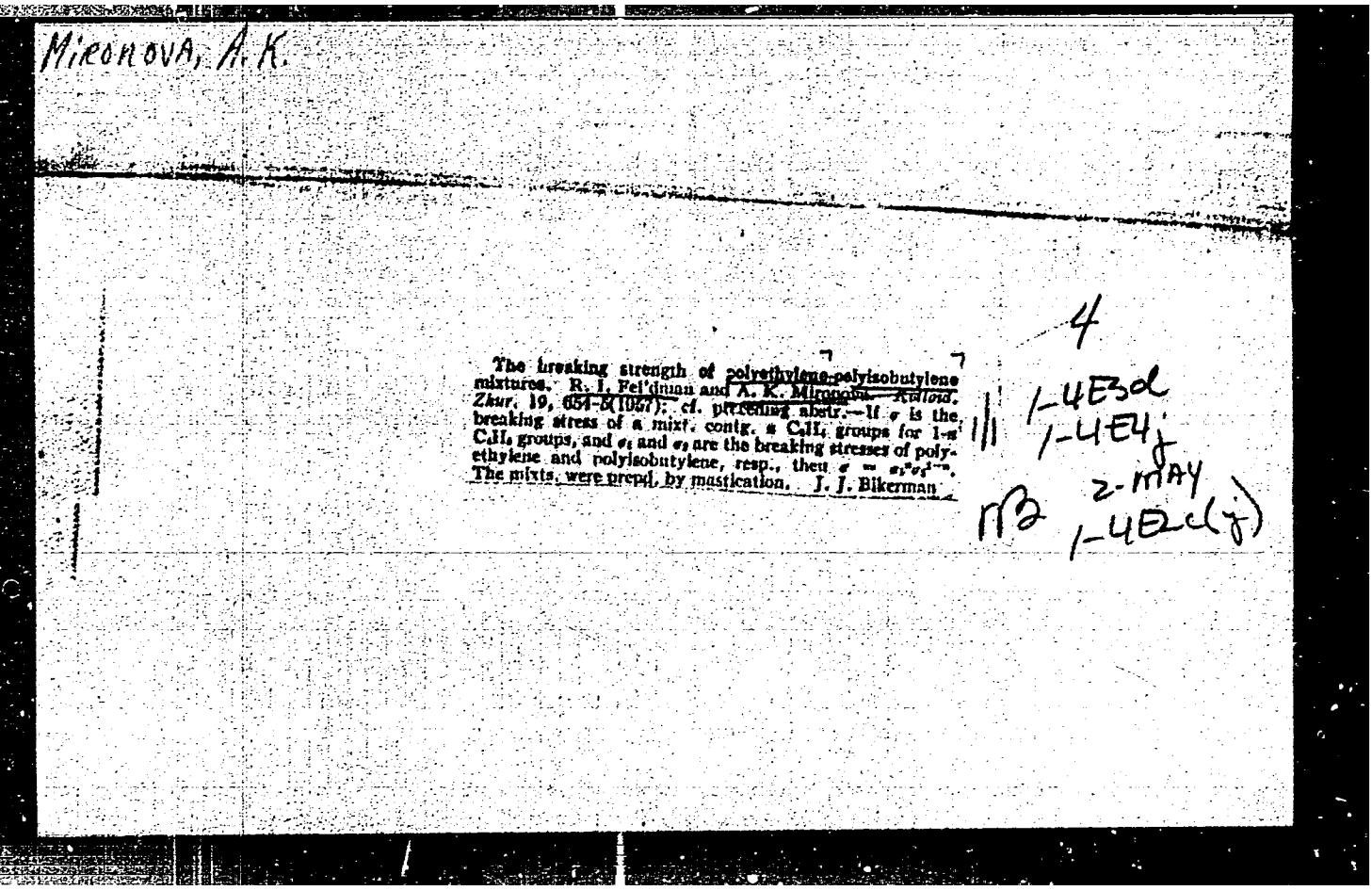
Change in the breaking strength of polyvinyl chloride due to introduction of two plasticizers. F. I. Feldman and A. K. Mironova (L. M. Kaganovich Technol. Inst., [illegible]). *Kolloid. Zhur.* 17, 455-7(1955); cf. C.A. 49, 1[illegible].—If b, m, and n are the mole fractions of polymer, first plasticizer, and 2nd plasticizer, resp., then the breaking stress σ of the polymer contg. the two plasticizers is σ_1^b, σ_2^m, σ_3^n; σ_1, σ_2, and σ_3 being consts. of the 3 substances, resp. This relation was confirmed for a polyvinyl chloride contg. 0-22 mole % of plasticizer consisting of 3 mixts. of $C_6H_4(CO_2Bu)_2$ and tritolyl phosphate at extension of 2 mm./min. at 20°. The material was in the highly viscous state, and for such materials, presumably, $\sigma = \sigma_1^b \ldots \sigma_i^i$, when i components are present.

J. J. Bikerman

1/T

MA

①



MIRONOVA, A. K.

The breaking strength of polyethylene-polyisobutylene mixtures. R. I. Fel'dman and A. K. Mironova. *Kolloid. Zhur.* 19, 651-8(1957); *cf.* preceding abstr.—If σ is the breaking stress of a mixt. contg. x C_2H_4 groups for 1-x C_4H_8 groups, and σ_1 and σ_2 are the breaking stresses of polyethylene and polyisobutylene, resp., then $\sigma = \sigma_1^x\sigma_2^{1-x}$. The mixts. were prepd. by mastication. J. J. Bikerman

4

1-4E3d
1-4E4j

MB 2-MAY
1-4E2d(j)

AUTHORS: Fel'dman, M.I.; Mironova, A.K.; Sokolov, S.I. 69-20-1-19/20

TITLE: The Effect of a Plasticizer on the Mechanical Properties of the Copolymer of Vinyl Chloride with Vinylidene Chloride and Polyvinyl Chloride (Vliyaniye plastifitsiruyushchikh dobavok na mekhanicheskiye svoystva sovmestnogo polimera vinilkhlorida s vinilidenkhloridom i polivinilkhlorida)

PERIODICAL: Kolloidnyy Zhurnal, 1958, Vol XX, # 1, pp 106-109 (USSR)

ABSTRACT: The article is a continuation of the work published in the references 1 and 2. The substances under investigation were soviden and polyvinylchloride igelite-K. Soviden was obtained by copolymerization of vinyl chloride and vinylidene chloride in the ratio 77 : 23. It was shown that polyvinyl chloride needs a larger quantity of plasticizer to reach a high-elastic state than the copolymer. A comparison of the results of previous work shows the same dependence of the mechanical properties on the effect of the plasticizer.

There are 2 figures, 1 tables and 4 Soviet references.

Card 1/2

69-20-1-15/20

The Effect of a Plasticizer on the Mechanical Properties of the Copolymer of Vinyl Chloride with Vinylidene Chloride and Polyvinyl Chloride

ASSOCIATION: Moskovskiy tekhnologicheskiy institut lëgkoy promyshlennosti (Moscow Technological Institute of Light Industry)

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